PCSM PLAN NARRATIVE & CALCULATIONS
Eagle & Radnor Roads Subdivision
Radnor Township, Delaware County
Plan Prepared For: CG Wayne, LLC

Date: September 9, 2020
Revision #1: December 11, 2020
Revision #1: January 15, 2021

TABLE OF CONTENTS

Executive Summary	1
POI & Outfall Location Map	2
Compliance Summary Table	3
Peak Flows and Runoff Volumes per Outfall	4
Basin Volumes & Dewater Times per Infiltration Bed	5
Tc Worksheets	6
Lever Spreader and Riprap Apron Design Sheets	8
Hydrograph Report: Pre & Post Development	
Peak Flow Recap Reports for Pre-Dev and Outfall A-1 thru A-7	11
Hydrograph Summary Reports for Pre-Dev and Outfall A-1 thru A-7	21
Pond Reports	91
Detailed Hydrograph Reports for the 2 year storm event (documents input data for Pre-Dev and Outfall A-1 thru A-7)	108
Rainfall Report	256
NOAA Atlas 14 PF Table for project area	257
Infiltration Testing Report, Radnor Street & Eagle Roads Development - Proposed Stormwater Management Facilities, Prepared by Geostructures, Inc, dated May 22, 2020	261

Plan Prepared By:
Patrick Spellman, P.E.
Site Engineering Concepts, LLC
P.O. Box 1992
Southeastern, PA 19399

EXECUTIVE SUMMARY

Revision #2 Changes:
Add level spreader and riprap apron worksheets. Revised Lot 11 basin bottom elevation. Updated impervious coverage numbers to reflected revised ROW lines. The limit of disturbance and overall stormwater design did not change and the revisions had no significant effect to volume or peak rate calculations. An E&S adequacy and NPDES permit applications are being prepared for review by the Delaware County Conservation District. The Township will be copied on applications.

Revision #1 Changes:
The report is revised to be consistent with the plan revisions based on township comments and new house footprints. The limit of disturbance remains 13.71 acres. The drainage maps are provided on Sheet 14 of the plan set. An E&S adequacy and NPDES permit applications will be submitted to the Delaware County Conservation District for approval.

The Applicant, CG Wayne, LLC, proposes to a subdivide the parent tract into 20 single family homes. The parent tract consists for 2 parcels. The larger parcel is located on the southeast corner of Eagle Road and Radnor Road (36-02-0097810, aka Eastern University West Parking Lot) and the smaller parcel immediately east along Eagle Road (36-02-0097820, aka 1052/1056 Eagle Road). An unnamed tributary to Gulph Creek runs between the 2 parcels. The project point of analysis, POI-A, is creek just north of the Walnut Lane culvert. To evaluate stormwater control performance, the contribution from the project stormwater management area (SWMA, same as the limit of disturbance) to POI-A for the existing conditions is determined. The SWMA is divided into 7 outfall locations to determine the post-development conditions. Each Outfall is assumed to have a Tt of zero from the outfall location to POI-A to provide a conservative estimate of the peak flows. See the Outfall Location Map in this report for the general locations. The drainage area map on Sheet 9 of the plan set provides a large-scale view of the outfall locations and site conditions.

A summary of the calculation results are provided on the tables in this report. The Compliance Summary Table provides the requirements and performance totals for the SWMA. The Peak Flows and Runoff Volumes Table presents results for the pre-development condition and each post-development outfall. The Basin Volumes and Dewater Times Table presents the sata for the each infiltration basin.

Peak flows and runoff volumes are calculated by the SCS soil cover complex method (TR-55) using the Hydraflow program. Output from the modeling is included with this report including peak outflow and hydrograph summaries for all hydrographs and storm events. To conserve paper, detailed hydrographs are provided for the 2 year storm event only. This documents the input data for all storm events. The only difference between storm events is the rain fall amount which is provided in the Hydraflow Rainfall Report

Each lot which passed infiltration tests was fitted with an infiltration bed. Each bed is design based on the proposed impervious and other coverage captured by the system of swale, inlets and infiltration beds regardless of lot in the drainage area. The remain areas (uncontrolled) and an additional 1,500 SF of future impervious area per lot is included in the bypass calculations. The property is in the Gulph Creek Watershed and release rates are per Table 408.2. Retention Volume requirement is based on Chapter 245-22.A(2)(a) for project with proposed impervious greater than 1,500 SF. The Water Quality Volume requirement is based on Chapter 245-23.D(1). The lots that failed infiltration testing are partially captured by a downstream basins and the balance of the area is included in the bypass calculations.

The limit of disturbance and stormwater regulatory area is 13.71 acres. During construction erosion and sediment control is accomplished through phased disturbance, sedimentation basin, immediate stabilization, and silt barriers.

OUTFALL AREAS	
OUTFALL	BASIN
A1	LOT 20
A2	LOT 19
A3	LOTS 12, 13, 14, 16, 17, 18, ROW BYPASS
A4	LOT 11
A5	LOTS 6, 7, 8, 9 & 10
A6	LOT 1
A6	LOTS 2 & 3, LOTS 4&5 BYPASS

PLAN PREPARED FOR:

CG WAYNE, LLC
EAGLE & RADNOR ROADS
WAYNE, PA

RADNOR TOWNSHIP DELAWARE COUNTY

NUM.	DATE	REVISION
1.	12/11/20	PER TOWNSHIP COMMENTS AND NEW HOUSE PLANS

PLAN PREPARED BY:

SITE ENGINEERING CONCEPTS, LLC
P.O. BOX 1992
SOUTHEASTERN, PA 19399
P: 610-240-0450 F: 610-240-0451 E:INFO@SITE-ENGINEERS.COM

OUTFALL MAP

DATE:AUG 31, 2020

SHEET 1 of 1

SCALE: 1"= 200'

COMPLIANCE SUMMARY

EVENT: **RADNOR STORMWATER MANAGEMENT** DATE: **9/9/2020**
PROJECT: **RADNOR & EAGLE RDS SUBDIVISION** BY: **LPS**
LOCATION: **SW CORNER, RADNOR & EAGLE ROADS** REVISED: **1/15/2021**

Hydrograph Description	Peak Outflow (cfs)							COMMENTS
	1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
	PROJECT AREA ANALYSIS							
WATERSHED	GULPH CR	OTHER	2YR POST<=1YR PRE 5<=2;10<=5;25<=10;50<=25;100					
PRE-DEV - REGULATED AREA	8.49	12.93	21.19	31.14	42.05	53.68	68.98	PreDev Hyd#9
REDUCTION REQUIRED		-4.44	-8.26	-9.95	-10.91	-11.63	0.00	Table408.2
PRE DEV W/ COMPENSATORY	-	16.11	23.35	35.75	46.92	58.66	73.91	PreDev Hyd#11
ALLOWABLE DISCHARGE*	-	11.67	15.09	25.80	36.01	47.03	73.91	Row 10 + Row 11
BASIN DISCHARGE & BYPASS	-	7.64	12.74	17.87	28.69	38.99	53.91	PEAK FLOW TBL
PASS/ FAIL	-	PASS	PASS	PASS	PASS	PASS	PASS	

*ALLOWABLE DISCHARGE=PRE-DEV+COMPENSATORY RUNOFF LESS REDUCTION REQUIRED

CHAPTER 245-22.A(2)(a): RETENTION VOLUME, ReV (=>1,500 SF				
2 YEAR POST-DEVELOPMENT		59,023	C.F.	SEE PEAK FLOW
2 YEAR PRE-DEVELOPMENT		48,764	C.F.	AND VOLUME
DIFFERENCE		10,259	C.F.	TABLE
BASIN INFILTRATION VOL		35,854	C.F.	
		PASS		

CHAP 245-22.A(2)(b): RETENTION VOLUME, ReV (>500&<1,500 SF)		
PARAMETE	*VALUE*	*UNIT*
P	1	IN
IMPERVIOU	>1500 SF	SF
ReV	N/A	CF
BASIN	35,854	CF
	N/A	

PROVIDED INFILTRATION VOLUME	
See Basin Volume Table for individual basin volumes	35854

CHAP 245-22.A(1)(c): DEWATER TIME
See basin dewater Table for individual basin dewater times

CHAP 245-23.D(1): WATER QUALITY VOLUME, WQv		
PARAMETE	*VALUE*	*UNIT*
P	1	IN
A	9.44	AC
I	100	%
ReV	32,555	CF
BASIN	35,854	CF
	PASS	

PEAK FLOWS & RUNOFF VOLUMES PER OUTFALL

EVENT: **RADNOR STORMWATER MANAGEMENT** DATE: **9/9/2020**
PROJECT: **RADNOR & EAGLE RDS SUBDIVISION** BY: **LPS**
LOCATION: **SW CORNER, RADNOR & EAGLE ROADS** REVISED: **1/15/2021**

Hydrograph Description	Peak Outflow (cfs)							
	1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	2-YR VOL
OUTFALL A-1	-	0.01	0.05	0.20	0.74	1.06	1.30	1483
OUTFALL A-2	-	0.00	0.00	0.12	0.77	0.13	1.92	2814
OUTFALL A-3	-	0.60	1.11	1.44	3.24	6.40	10.29	17821
OUTFALL A-4	-	0.54	0.93	1.18	1.49	1.75	2.02	2574
OUTFALL A-5	-	0.03	0.44	1.19	2.68	3.86	5.70	9589
OUTFALL A-6	-	0.00	0.00	0.00	0.00	0.02	0.21	1682
OUTFALL A-7	-	0.12	0.15	0.21	0.84	2.02	3.30	4759
BYPASS	-	6.33	10.06	13.54	18.94	23.75	29.17	18301
POI-A TOTAL*	-	7.64	12.74	17.87	28.69	38.99	53.91	59023

*ASSUME WORST CASE SCENARIO OF IDENTICAL Tt FROM OUTFALL to POI.

BASIN VOLUMES & DEWATER TIMES PER BED

EVENT: **RADNOR STORMWATER MANAGEMENT** DATE: **9/9/2020**
PROJECT: **RADNOR & EAGLE RDS SUBDIVISION** BY: **LPS**
LOCATION: **SW CORNER, RADNOR & EAGLE ROADS** REVISED: **1/15/2021**

LOT #	BASIN OUTLET	LOWER ELEVATION		UPPER ELEVATION		INFIL VOL PROVIDED	BASIN FOOTPRINT	INFIL RATE	DEWATER TIME	MAX ALLOWED	
	INV	ELEV	CF	ELEV	CF	CF	SF	IN/HR	HR	HR	
1	354	353.80	2133	354.20	2705	2419	1482	1.6	12	96	Pass
2	355.75	355.40	1788	355.80	2133	2090	1482	2.64	6	96	Pass
3	359.5	359.00	1534	359.40	1922	2019	1638	1.68	9	96	Pass
4	NO BED										
5	NO BED										
6	379	379.80	752	380.20	953	350	602	2.64	3	96	Pass
7	381.5	381.40	1197	381.80	1429	1255	1007	1.44	10	96	Pass
8	379	378.80	3045	379.20	3493	3269	2158	1.92	9	96	Pass
9	371.5	371.20	673	371.60	995	914	1387	2.48	3	96	Pass
10	370	369.80	2274	370.20	2609	2442	1577	0.72	26	96	Pass
11	363.25	363.00	1785	363.40	2237	2068	1898	0.24	54	96	Pass
12	381	380.80	3045	381.20	3493	3269	2158	0.56	32	96	Pass
13	384.5	384.40	2237	384.80	2669	2345	1898	0.32	46	96	Pass
14	387	388.80	4868	389.20	5584	1646	3344	0.48	12	96	Pass
15	NO BED										
16	402.25	402.00	2539	402.40	3182	2941	2678	2.64	5	96	Pass
17	406.5	406.40	2867	406.80	3421	3006	2418	0.72	21	96	Pass
18	402.5	402.40	1670	402.50	1992	1992	1898	1.44	9	96	Pass
19	393.75	394.30	2669	349.70	3061	2674	1898	1.92	9	96	Pass
20	369.5	369.40	1103	369.80	1316	1156	1022	4.4	3	96	Pass

Time of concentration (Tc)

PROJECT: ***CG WAYNE SUBDIVISION*** DATE: ***9/8/2020***
LOCATION: ***EAGLE & RADNOR ROADS*** BY: ***LPS***
AREA: ***NORTH PRE-DEV*** CHECKED BY:

☑ Pre-Development ☐ During Construction ☐ Post-Development
☑ Tc ☐ Tt

Notes: Space for as many as three segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments

Sheet Flow *(Applicable to Tc only)*		**Segment ID**	***AB***								
1	Surface Description (table 3-1)		GRASS			IMPERV					
2	Manning's roughness coeff., n (table 3-1)		0.24			0.011		N/A			
3	Flow length, L (total L≤ 300 ft)	ft	150								
4	Two-yr 24-hr rainfall, P_2	in	3.2			3.2					
5	Land slope, s	ft/ft	0.080			0.02					
6	$T_t = \frac{0.007(nL)^{.8}}{P_2^{.5}s^{.4}}$	Compute Tt hr	0.1889	+			+		=	0.1889	
Shallow Concentrated Flow		**Segment ID**	***BC***			***CD***		***DC***			
7	Surface Description (paved or unpaved)		UNPAVED			PAVED		UNPAVED			
8	Flow length, L	ft	292			563		113			
9	Watercourse slope, s	ft/ft	0.075			0.025		0.08			
10	Average velocity, V (figure 3-1)	ft/sec	4.43			3.24		4.57			
11	$T_t = \frac{L}{3600\ v}$	Compute Tt hr	0.0183	+		0.0483	+	0.0069	=	0.0735	
Channel Flow		**Segment ID**									
12	Cross sectional flow area, a	ft^2	0								
13	Wetted perimeter, p_w	ft	0								
14	Hydraulic radius, $r = {}^{a}/_{wp}$	ft									
15	Channel Slope, s	ft/ft	1.000								
16	Manning's roughness coeff., n (table 3-1)		0.1								
17	$V = \frac{1.49r^{2/3}s^{1/2}}{n}$	ft/s									
18	Flow length, L	ft	100								
19	$T_t = \frac{L}{3600\ v}$	Compute Tt hr		+			+		=		
20	Watershed or subarea T_c or T_t (add T_t in steps 6,11, and 19)								hr	0.2624	

T_c = 16 Minutes

Time of concentration (Tc)

PROJECT: ***CG WAYNE SUBDIVISION*** DATE: ***9/8/2020***
LOCATION: ***EAGLE & RADNOR ROADS*** BY: ***LPS***
AREA: ***SOUTH PRE-DEV*** CHECKED BY:

☑ Pre-Development ☐ During Construction ☐ Post-Development
☑ Tc ☐ Tt

Notes: Space for as many as three segments per flow type can be used for each worksheet. Include a map, schematic, or description of flow segments

Sheet Flow *(Applicable to Tc only)*		Segment ID	*AB*						
1 Surface Description (table 3-1)			GRASS		IMPERV				
2 Manning's roughness coeff., n (table 3-1)			0.24		0.011		N/A		
3 Flow length, L (total L≤ 300 ft)		ft	150						
4 Two-yr 24-hr rainfall, P_2		in	3.2		3.2				
5 Land slope, s		ft/ft	0.026		0.02				
6 $T_t = \frac{0.007(nL)^{.8}}{P_2^{.5}s^{.4}}$	Compute Tt	hr	0.2962	+		+		=	0.2962

Shallow Concentrated Flow		Segment ID	*BC*		*CD*		*DC*		
7 Surface Description (paved or unpaved)			UNPAVED		PAVED		UNPAVED		
8 Flow length, L		ft	570						
9 Watercourse slope, s		ft/ft	0.08		0.025		0.08		
10 Average velocity, V (figure 3-1)		ft/sec	4.57		3.24		4.57		
11 $T_t = \frac{L}{3600\ v}$	Compute Tt	hr	0.0346	+		+		=	0.0346

Channel Flow		Segment ID							
12 Cross sectional flow area, a		ft^2	0						
13 Wetted perimeter, p_w		ft	0						
14 Hydraulic radius, $r = {}^{a}/_{wp}$		ft							
15 Channel Slope, s		ft/ft	1.000						
16 Manning's roughness coeff., n (table 3-1)			0.1						
17 $V = \frac{1.49r^{2/3}s^{1/2}}{n}$		ft/s							
18 Flow length, L		ft	100						
19 $T_t = \frac{L}{3600\ v}$	Compute Tt	hr		+		+		=	
20 Watershed or subarea T_c or T_t (add T_t in steps 6,11, and 19)								hr	0.3308

T_c = 20 Minutes

Level Spreader Discharge Design

V A R I A B L E S	
Q_{100} =	100-Year flow over trench rim (cfs)
C =	Weir coefficient (assumed to be 3.1)
L =	Weir length; as measured along trench rim
H =	Head (in feet) over the trench rim

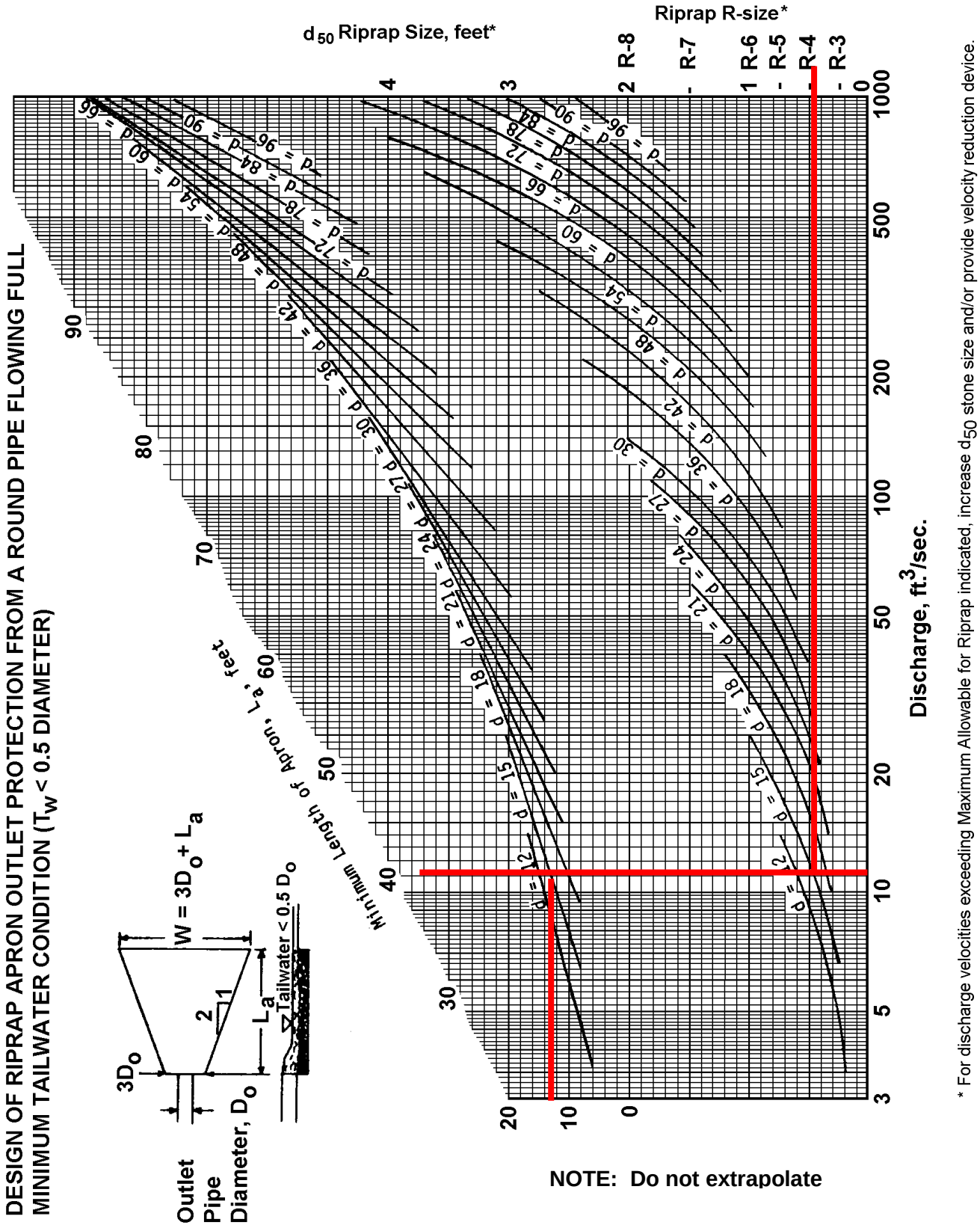
Q = vA = continuity equation

where: Q = flow rate disharging from level spreader
v = allowable outflow velocity for lawn/meadow = 4 ft/s (taken from E&S Manual) used 3 ft/s to be conservative
A = L x H
H = height of flow discharging from level spreader (used 0.5 inches = 0.04 ft)
L = length of level spreader

Outfall	Q_{100}	v	A	H	Required L	Provided L
1	1.30	3	0.43	0.04	11	11
2	1.90	3	0.63	0.04	16	16
3	10.00	3	3.33	0.04	83	N/A
4	1.95	3	0.65	0.04	16	16
5	5.70	3	1.90	0.04	48	N/A
6	0.21	3	0.07	0.04	2	7
7	3.30	3	1.10	0.04	28	28

Level spreaders designed so discharge velocity is below erosive velocity of existing cover

FIGURE 9.3
Riprap Apron Design, Minimum Tailwater Condition

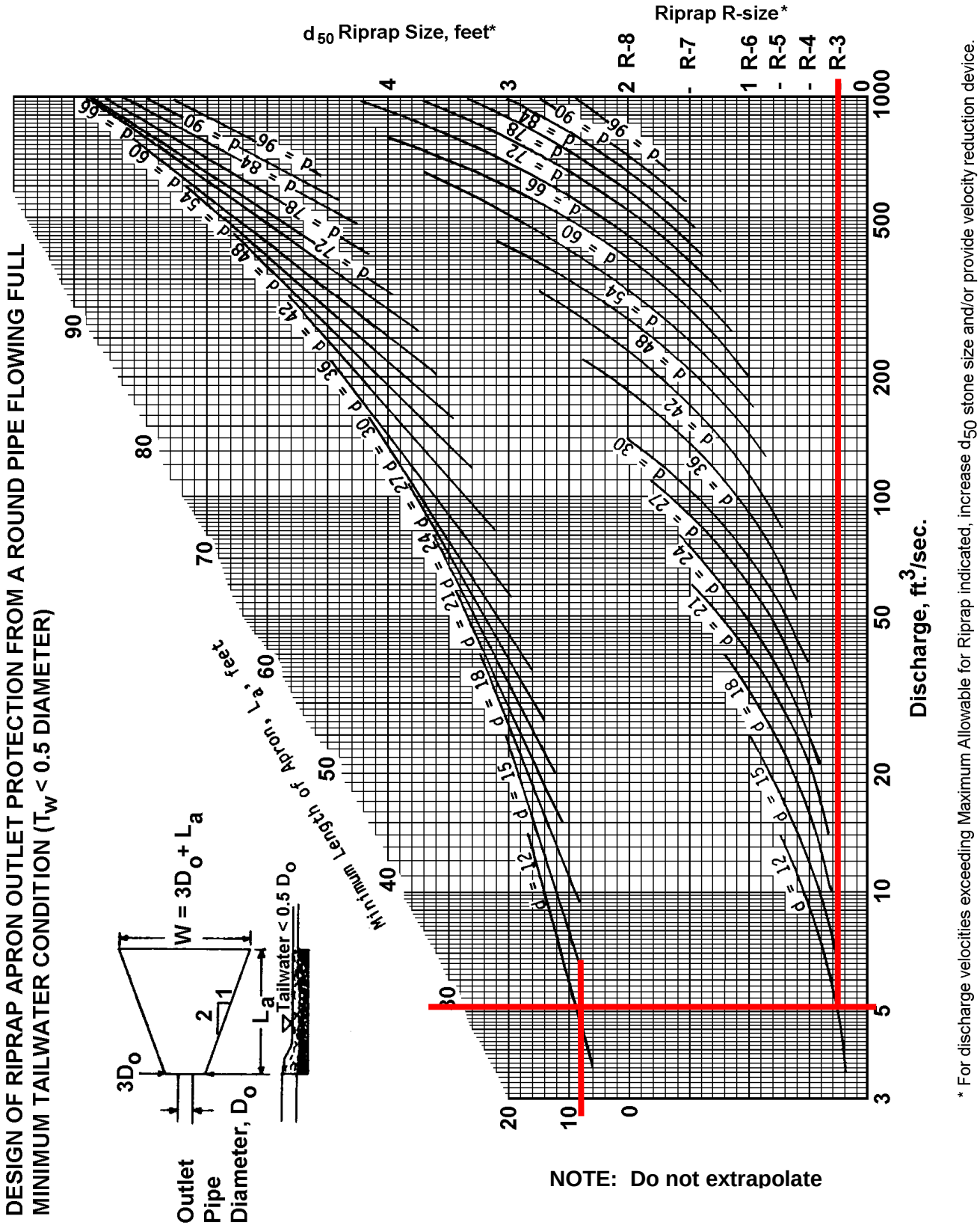


* For discharge velocities exceeding Maximum Allowable for Riprap indicated, increase d_{50} stone size and/or provide velocity reduction device.

Adapted from USDA - NRCS

Not to be used for Box Culverts

FIGURE 9.3
Riprap Apron Design, Minimum Tailwater Condition



Adapted from USDA - NRCS

Not to be used for Box Culverts

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	4.352	5.577	-------	7.204	8.828	10.45	12.07	14.09	PRE-NORTH-80% OF IMP
2	SCS Runoff	------	0.023	0.122	-------	0.337	0.607	0.910	1.238	1.684	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	------	0.306	1.538	-------	4.260	7.782	11.76	16.07	21.84	PRE-NORTH-MEADOW
4	Combine	1, 2, 3	4.499	6.812	-------	11.30	16.66	22.54	28.80	37.04	PRE-NORTH-TOTAL
5	SCS Runoff	------	3.583	4.592	-------	5.932	7.268	8.603	9.936	11.60	PRE-SOUTH-80% OF IMP
6	SCS Runoff	------	0.019	0.101	-------	0.278	0.500	0.750	1.020	1.388	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	------	0.204	1.027	-------	2.845	5.197	7.853	10.74	14.58	PRE-SOUTH-MEADOW
8	Combine	5, 6, 7	3.684	5.411	-------	8.675	12.54	16.76	21.23	27.10	PRE-SOUTH-TOTAL
9	SCS Runoff	------	0.422	0.540	-------	0.697	0.854	1.011	1.168	1.363	PRE-LOT20-80% OF IMP
10	SCS Runoff	------	0.002	0.013	-------	0.034	0.060	0.089	0.121	0.162	PRE-LOT20-20% IMP AS MEADOW
11	SCS Runoff	------	0.037	0.196	-------	0.529	0.928	1.375	1.856	2.494	PRE-LOT20-MEADOW
12	Combine	9, 10, 11	0.427	0.684	-------	1.182	1.757	2.386	3.055	3.934	PRE-LOT20-TOTAL
13	Combine	4, 8, 12	8.417	12.65	-------	20.58	30.13	40.59	51.70	66.30	PRE-POIA-TOTAL
14	SCS Runoff	------	0.084	0.281	-------	0.649	1.081	1.557	2.066	2.741	COMP-GRASS
15	Combine	13, 14	8.494	12.93	-------	21.19	31.14	42.05	53.68	68.98	POI A PREDEV+COMP

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	0.186	0.225	-------	0.283	0.333	0.403	0.461	0.525	20A-POST-IMP
2	SCS Runoff	------	0.007	0.017	-------	0.038	0.057	0.088	0.116	0.148	20A-POST-LAWN
3	SCS Runoff	------	0.274	0.331	-------	0.417	0.489	0.592	0.678	0.772	20B-POST-IMP
4	SCS Runoff	------	0.018	0.044	-------	0.094	0.143	0.220	0.290	0.369	20B-POST-LAWN
5	Combine	1, 2, 3, 4	0.470	0.593	-------	0.799	0.980	1.251	1.487	1.750	20-POST-BED INFLOW
6	Reservoir	5	0.008	0.009	-------	0.047	0.197	0.738	1.056	1.300	20-POST-BED DISCHARGE

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	0.091	0.110	-------	0.139	0.163	0.197	0.226	0.257	19A-POST-CAPT-IMP
2	SCS Runoff	------	0.092	0.224	-------	0.483	0.733	1.128	1.485	1.891	19A-POST-CAPT-LAWN
3	SCS Runoff	------	0.618	0.746	-------	0.939	1.102	1.334	1.528	1.739	19B-POST-CAPT-IMP
4	SCS Runoff	------	0.021	0.051	-------	0.109	0.166	0.255	0.336	0.428	19B-POST-CAPT-LAWN
5	Combine	1, 2, 3, 4	0.756	1.055	-------	1.581	2.066	2.809	3.467	4.206	19-BASIN-INFLOW
6	Reservoir	5	0.000	0.000	-------	0.000	0.116	0.767	1.316	1.924	19-BED DISCHARGE

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	0.219	0.265	-------	0.334	0.391	0.474	0.543	0.617	16A-POST-IMP
2	SCS Runoff	------	0.205	0.503	-------	1.083	1.645	2.531	3.333	4.245	16A-POST-LAWN
3	SCS Runoff	------	0.260	0.313	-------	0.395	0.463	0.560	0.642	0.731	16B-POST-IMP
4	SCS Runoff	------	0.022	0.055	-------	0.118	0.179	0.276	0.363	0.463	16B-POST-LAWN
5	Combine	1, 2, 3, 4	0.618	1.033	-------	1.815	2.559	3.724	4.771	5.959	16-POST-BED INFLOW
6	Reservoir	5	0.000	0.000	-------	0.000	0.000	0.393	1.036	1.795	16-POST-BED DISCHARGE
7	SCS Runoff	------	0.402	0.486	-------	0.611	0.717	0.868	0.995	1.132	14A-POST-IMP
8	SCS Runoff	------	0.046	0.114	-------	0.245	0.372	0.573	0.754	0.960	14A-POST-LAWN
9	SCS Runoff	------	0.548	0.662	-------	0.834	0.978	1.184	1.357	1.544	14B-POST-IMP
10	SCS Runoff	------	0.045	0.110	-------	0.238	0.361	0.555	0.731	0.931	14B-POST-LAWN
11	SCS Runoff	------	0.428	0.517	-------	0.650	0.763	0.923	1.058	1.204	15A-POST-IMP
12	SCS Runoff	------	0.084	0.206	-------	0.445	0.675	1.040	1.369	1.743	15A-POST-LAWN
13	Combine	7, 8, 9, 10, 11, 12	1.445	1.960	-------	2.864	3.692	4.951	6.063	7.307	14&15-POST-BED INFLOW
14	Reservoir	13	0.236	0.601	-------	1.116	1.443	1.848	2.168	2.531	14-POST-BED DISCHARGE
15	SCS Runoff	------	0.281	0.340	-------	0.428	0.502	0.608	0.696	0.792	17A-POST-IMP
16	SCS Runoff	------	0.097	0.238	-------	0.513	0.779	1.198	1.578	2.009	17A-POST-LAWN
17	SCS Runoff	------	0.084	0.102	-------	0.128	0.150	0.182	0.208	0.237	17B-POST-IMP
18	SCS Runoff	------	0.051	0.124	-------	0.266	0.405	0.623	0.820	1.044	17B-POST-LAWN
19	SCS Runoff	------	0.175	0.212	-------	0.267	0.313	0.379	0.434	0.494	17C-POST-IMP
20	SCS Runoff	------	0.013	0.032	-------	0.069	0.105	0.162	0.213	0.271	17C-POST-LAWN
21	Combine	15, 16, 17, 18, 19, 20	0.630	0.963	-------	1.576	2.152	3.047	3.847	4.752	17-POST-BED INFLOW
22	Reservoir	21	0.000	0.000	-------	0.000	0.028	0.303	0.961	1.695	17-POST-BED DISCHARGE
23	SCS Runoff	------	0.216	0.260	-------	0.328	0.385	0.466	0.534	0.607	18A-POST-IMP
24	SCS Runoff	------	0.044	0.107	-------	0.231	0.351	0.540	0.711	0.906	18A-POST-LAWN
25	SCS Runoff	------	0.420	0.508	-------	0.639	0.750	0.908	1.040	1.183	18B/C-POST-IMP
26	SCS Runoff	------	0.020	0.050	-------	0.108	0.164	0.253	0.333	0.424	18B/C-POST-LAWN
27	Combine	23, 24, 25, 26	0.661	0.869	-------	1.239	1.575	2.083	2.529	3.027	18-POST-BED INFLOW
28	Reservoir	27	0.000	0.000	-------	0.000	0.094	0.650	1.192	1.722	18-POST-BED DISCHARGE
29	SCS Runoff	------	0.260	0.313	-------	0.395	0.463	0.560	0.642	0.731	13A/B-POST-IMP
30	SCS Runoff	------	0.061	0.150	-------	0.324	0.492	0.758	0.998	1.271	13A/B-POST-LAWN
31	SCS Runoff	------	0.186	0.225	-------	0.283	0.333	0.403	0.461	0.525	13B-POST-IMP
32	SCS Runoff	------	0.065	0.160	-------	0.344	0.523	0.805	1.059	1.349	13B-POST-LAWN
33	Combine	29, 30, 31, 32	0.515	0.782	-------	1.270	1.730	2.442	3.078	3.798	13-POST-BED INFLOW
34	Reservoir	33	0.000	0.000	-------	0.008	0.076	0.421	1.105	1.777	13-POST-BED DISCHARGE

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
35	SCS Runoff	------	0.325	0.393	-------	0.495	0.580	0.702	0.805	0.916	12A-POST-IMP
36	SCS Runoff	------	0.047	0.116	-------	0.250	0.380	0.584	0.769	0.980	12A-POST-LAWN
37	SCS Runoff	------	0.175	0.212	-------	0.267	0.313	0.379	0.434	0.494	12B-POST-IMP
38	SCS Runoff	------	0.011	0.026	-------	0.057	0.086	0.132	0.174	0.222	12B-POST-LAWN
39	SCS Runoff	------	0.230	0.278	-------	0.350	0.411	0.497	0.570	0.648	12C-POST-IMP
40	SCS Runoff	------	0.009	0.022	-------	0.046	0.069	0.105	0.137	0.174	12C-POST-LAWN
41	Combine	35, 36, 37, 38, 39, 40	0.759	0.988	-------	1.393	1.758	2.309	2.792	3.330	12-POST-BED INFLOW
42	Reservoir	41	0.000	0.000	-------	0.000	0.000	0.071	0.294	0.978	12-POST-BED DISCHARGE
43	Combine	6, 14, 22, 28, 34, 42	0.236	0.601	-------	1.116	1.443	3.236	6.398	10.29	A3 CONTROLED DISCHARGE

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	0.559	0.676	-------	0.850	0.998	1.208	1.384	1.575	11A-POST-IMP
2	SCS Runoff	------	0.077	0.188	-------	0.406	0.616	0.948	1.249	1.591	11A-POST-LAWN
3	SCS Runoff	------	0.077	0.093	-------	0.117	0.137	0.166	0.190	0.216	11B-POST-IMP
4	SCS Runoff	------	0.031	0.075	-------	0.162	0.246	0.379	0.499	0.635	11B-POST-LAWN
5	Combine	1, 2, 3, 4	0.683	0.961	-------	1.453	1.907	2.604	3.222	3.917	11-POST-BED INFLOW
6	Reservoir	5	0.281	0.542	-------	0.923	1.175	1.496	1.753	2.020	11-POST-BED DISCHARGE

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	0.143	0.172	-------	0.217	0.254	0.308	0.353	0.401	6A-POST-IMP
2	SCS Runoff	------	0.012	0.029	-------	0.063	0.095	0.147	0.193	0.246	6A-POST-LAWN
3	SCS Runoff	------	0.263	0.318	-------	0.400	0.469	0.568	0.651	0.741	6B-POST-IMP
4	SCS Runoff	------	0.004	0.009	-------	0.019	0.029	0.044	0.058	0.074	6B-POST-LAWN
5	Combine	1, 2, 3, 4	0.412	0.513	-------	0.678	0.822	1.035	1.218	1.420	6-POST-BED INFLOW
6	Reservoir	5	0.000	0.000	-------	0.021	0.259	0.775	1.060	1.310	6-POST-BED DISCHARGE
7	SCS Runoff	------	0.157	0.190	-------	0.239	0.280	0.339	0.389	0.443	7A-POST-IMP
8	SCS Runoff	------	0.054	0.131	-------	0.283	0.429	0.661	0.870	1.108	7A-POST-LAWN
9	SCS Runoff	------	0.245	0.296	-------	0.372	0.437	0.529	0.606	0.689	7B-POST-IMP
10	SCS Runoff	------	0.015	0.038	-------	0.082	0.124	0.191	0.251	0.320	7B-POST-LAWN
11	Combine	7, 8, 9, 10	0.433	0.610	-------	0.923	1.213	1.658	2.053	2.497	7-POST-BED INFLOW
12	Reservoir	11	0.000	0.000	-------	0.000	0.105	0.700	1.196	1.711	7-POST-BED DISCHARGE
13	SCS Runoff	------	0.230	0.278	-------	0.350	0.411	0.497	0.570	0.648	8A-POST-IMP
14	SCS Runoff	------	0.069	0.168	-------	0.362	0.550	0.846	1.114	1.418	8A-POST-LAWN
15	SCS Runoff	------	0.274	0.331	-------	0.417	0.489	0.592	0.678	0.772	8B-POST-IMP
16	SCS Runoff	------	0.057	0.140	-------	0.302	0.458	0.705	0.928	1.182	8B-POST-LAWN
17	Combine	13, 14, 15, 16	0.570	0.847	-------	1.351	1.822	2.551	3.201	3.935	8-POST-BED INFLOW
18	Reservoir	17	0.000	0.000	-------	0.000	0.000	0.000	0.203	0.919	8-POST-DISCHARGE
19	SCS Runoff	------	0.025	0.060	-------	0.129	0.197	0.302	0.398	0.507	9A-POST-LAWN
20	SCS Runoff	------	0.599	0.724	-------	0.912	1.069	1.294	1.483	1.688	9B-POST-IMP
21	SCS Runoff	------	0.094	0.230	-------	0.495	0.752	1.157	1.523	1.940	9B-POST-LAWN
22	Combine	19, 20, 21	0.656	0.941	-------	1.452	1.927	2.658	3.307	4.039	9-POST-BED INFLOW
23	Reservoir	22	0.000	0.031	-------	0.444	0.935	1.442	1.821	2.180	9-POST-BED DISCHARGE
24	SCS Runoff	------	0.157	0.190	-------	0.239	0.280	0.339	0.389	0.443	10A-POST-IMP
25	SCS Runoff	------	0.006	0.015	-------	0.033	0.050	0.076	0.101	0.128	10A-POST-LAWN
26	SCS Runoff	------	0.318	0.384	-------	0.484	0.567	0.687	0.787	0.895	10B-POST-IMP
27	SCS Runoff	------	0.059	0.145	-------	0.312	0.473	0.728	0.959	1.221	10B-POST-LAWN
28	Combine	24, 25, 26, 27	0.500	0.686	-------	1.011	1.309	1.763	2.165	2.615	10-POST-BED INFLOW
29	Reservoir	28	0.000	0.000	-------	0.000	0.000	0.045	0.223	0.680	10-POST-BED DISCHARGE
30	Combine	6, 12, 18, 23, 29	0.000	0.031	-------	0.444	1.194	2.680	3.861	5.696	A5 CONTROLLED DISCHARGE

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	0.270	0.327	-------	0.411	0.483	0.584	0.669	0.762	1A-IMP
2	SCS Runoff	------	0.035	0.086	-------	0.185	0.280	0.432	0.568	0.724	1A-LAWN
3	SCS Runoff	------	0.219	0.265	-------	0.334	0.391	0.474	0.543	0.617	1B-IMP
4	SCS Runoff	------	0.006	0.015	-------	0.033	0.050	0.076	0.101	0.128	1B-LAWN
5	Combine	1, 2, 3, 4	0.506	0.653	-------	0.913	1.149	1.504	1.815	2.161	1-POST-BED INFLOW
6	Reservoir	5	0.000	0.000	-------	0.000	0.000	0.000	0.017	0.214	1-POST-BED DISCHARGE

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	0.168	0.203	-------	0.256	0.300	0.363	0.416	0.473	2A-POST-IMP
2	SCS Runoff	------	0.014	0.034	-------	0.073	0.111	0.170	0.224	0.286	2A-POST-LAWN
3	SCS Runoff	------	0.398	0.481	-------	0.606	0.711	0.860	0.986	1.122	2B/C-POST-IMP
4	SCS Runoff	------	0.044	0.107	-------	0.231	0.351	0.540	0.711	0.906	2B/C-POST-LAWN
5	SCS Runoff	------	0.048	0.057	-------	0.072	0.085	0.103	0.118	0.134	2D-POST-IMP
6	SCS Runoff	------	0.023	0.057	-------	0.123	0.187	0.288	0.379	0.483	2D-POST-LAWN
7	Combine	1, 2, 3, 4, 5, 6	0.645	0.879	-------	1.289	1.665	2.238	2.744	3.311	2-POST-BED INFLOW
8	Reservoir	7	0.062	0.071	-------	0.086	0.101	0.328	1.014	1.651	2-POST-BED DISCHARGE
9	SCS Runoff	------	0.263	0.318	-------	0.400	0.469	0.568	0.651	0.741	3B-POST-IMP
10	SCS Runoff	------	0.024	0.058	-------	0.126	0.191	0.294	0.387	0.492	3B-POST-LAWN
11	SCS Runoff	------	0.402	0.486	-------	0.611	0.717	0.868	0.995	1.132	4B-POST-IMP
12	SCS Runoff	------	0.054	0.131	-------	0.283	0.429	0.661	0.870	1.108	4B-POST-LAWN
13	Combine	9, 10, 11, 12	0.695	0.931	-------	1.346	1.725	2.301	2.808	3.375	3-POST-BED INFLOW
14	Reservoir	13	0.045	0.052	-------	0.062	0.106	0.544	1.009	1.647	3-POST-BED DISCHARGE
15	Combine	8, 14	0.107	0.123	-------	0.148	0.207	0.840	2.023	3.298	A7 CONTROLLED DISCHARGE

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	SCS Runoff	------	3.794	4.583	-------	5.770	6.768	8.193	9.388	10.68	POST-BYPASS-IMP
2	SCS Runoff	------	0.926	2.266	-------	4.881	7.411	11.41	15.02	19.13	POST-BYPASS-GRASS
3	Combine	1, 2	4.276	6.329	-------	10.06	13.54	18.94	23.75	29.17	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	4.352	2	722	13,570	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	0.023	2	728	237	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	0.306	2	734	3,446	------	------	------	PRE-NORTH-MEADOW
4	Combine	4.499	2	722	17,253	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	3.583	2	722	11,174	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	0.019	2	728	195	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	0.204	2	734	2,301	------	------	------	PRE-SOUTH-MEADOW
8	Combine	3.684	2	722	13,670	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	SCS Runoff	0.422	2	716	976	------	------	------	PRE-LOT20-80% OF IMP
10	SCS Runoff	0.002	2	724	18	------	------	------	PRE-LOT20-20% IMP AS MEADOW
11	SCS Runoff	0.037	2	724	282	------	------	------	PRE-LOT20-MEADOW
12	Combine	0.427	2	716	1,276	9, 10, 11	------	------	PRE-LOT20-TOTAL
13	Combine	8.417	2	722	32,198	4, 8, 12	------	------	PRE-POIA-TOTAL
14	SCS Runoff	0.084	2	724	455	------	------	------	COMP-GRASS
15	Combine	8.494	2	722	32,653	13, 14	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	5.577	2	722	17,608	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	0.122	2	726	562	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	1.538	2	728	8,186	------	------	------	PRE-NORTH-MEADOW
4	Combine	6.812	2	724	26,356	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	4.592	2	722	14,498	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	0.101	2	726	464	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	1.027	2	728	5,467	------	------	------	PRE-SOUTH-MEADOW
8	Combine	5.411	2	722	20,428	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	SCS Runoff	0.540	2	716	1,266	------	------	------	PRE-LOT20-80% OF IMP
10	SCS Runoff	0.013	2	722	43	------	------	------	PRE-LOT20-20% IMP AS MEADOW
11	SCS Runoff	0.196	2	722	670	------	------	------	PRE-LOT20-MEADOW
12	Combine	0.684	2	718	1,979	9, 10, 11	------	------	PRE-LOT20-TOTAL
13	Combine	12.65	2	722	48,764	4, 8, 12	------	------	PRE-POIA-TOTAL
14	SCS Runoff	0.281	2	722	974	------	------	------	COMP-GRASS
15	Combine	12.93	2	722	49,738	13, 14	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	7.204	2	722	22,999	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	0.337	2	724	1,149	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	4.260	2	726	16,719	------	------	------	PRE-NORTH-MEADOW
4	Combine	11.30	2	724	40,866	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	5.932	2	722	18,937	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	0.278	2	724	947	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	2.845	2	726	11,166	------	------	------	PRE-SOUTH-MEADOW
8	Combine	8.675	2	724	31,049	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	SCS Runoff	0.697	2	716	1,654	------	------	------	PRE-LOT20-80% OF IMP
10	SCS Runoff	0.034	2	720	89	------	------	------	PRE-LOT20-20% IMP AS MEADOW
11	SCS Runoff	0.529	2	720	1,368	------	------	------	PRE-LOT20-MEADOW
12	Combine	1.182	2	718	3,110	9, 10, 11	------	------	PRE-LOT20-TOTAL
13	Combine	20.58	2	724	75,026	4, 8, 12	------	------	PRE-POIA-TOTAL
14	SCS Runoff	0.649	2	722	1,868	------	------	------	COMP-GRASS
15	Combine	21.19	2	722	76,894	13, 14	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	8.828	2	722	28,395	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	0.607	2	724	1,868	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	7.782	2	726	27,184	------	------	------	PRE-NORTH-MEADOW
4	Combine	16.66	2	724	57,448	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	7.268	2	722	23,380	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	0.500	2	724	1,539	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	5.197	2	726	18,155	------	------	------	PRE-SOUTH-MEADOW
8	Combine	12.54	2	724	43,075	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	SCS Runoff	0.854	2	716	2,042	------	------	------	PRE-LOT20-80% OF IMP
10	SCS Runoff	0.060	2	720	144	------	------	------	PRE-LOT20-20% IMP AS MEADOW
11	SCS Runoff	0.928	2	720	2,224	------	------	------	PRE-LOT20-MEADOW
12	Combine	1.757	2	718	4,410	9, 10, 11	------	------	PRE-LOT20-TOTAL
13	Combine	30.13	2	724	104,932	4, 8, 12	------	------	PRE-POIA-TOTAL
14	SCS Runoff	1.081	2	722	2,935	------	------	------	COMP-GRASS
15	Combine	31.14	2	724	107,867	13, 14	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	10.45	2	722	33,795	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	0.910	2	724	2,688	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	11.76	2	726	39,121	------	------	------	PRE-NORTH-MEADOW
4	Combine	22.54	2	724	75,603	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	8.603	2	722	27,826	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	0.750	2	724	2,215	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	7.853	2	726	26,127	------	------	------	PRE-SOUTH-MEADOW
8	Combine	16.76	2	724	56,168	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	SCS Runoff	1.011	2	716	2,430	------	------	------	PRE-LOT20-80% OF IMP
10	SCS Runoff	0.089	2	720	208	------	------	------	PRE-LOT20-20% IMP AS MEADOW
11	SCS Runoff	1.375	2	720	3,200	------	------	------	PRE-LOT20-MEADOW
12	Combine	2.386	2	718	5,838	9, 10, 11	------	------	PRE-LOT20-TOTAL
13	Combine	40.59	2	724	137,609	4, 8, 12	------	------	PRE-POIA-TOTAL
14	SCS Runoff	1.557	2	722	4,131	------	------	------	COMP-GRASS
15	Combine	42.05	2	722	141,740	13, 14	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	12.07	2	722	39,196	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	1.238	2	724	3,587	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	16.07	2	726	52,202	------	------	------	PRE-NORTH-MEADOW
4	Combine	28.80	2	724	94,984	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	9.936	2	722	32,273	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	1.020	2	724	2,956	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	10.74	2	726	34,863	------	------	------	PRE-SOUTH-MEADOW
8	Combine	21.23	2	724	70,091	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	SCS Runoff	1.168	2	716	2,819	------	------	------	PRE-LOT20-80% OF IMP
10	SCS Runoff	0.121	2	720	277	------	------	------	PRE-LOT20-20% IMP AS MEADOW
11	SCS Runoff	1.856	2	720	4,270	------	------	------	PRE-LOT20-MEADOW
12	Combine	3.055	2	718	7,366	9, 10, 11	------	------	PRE-LOT20-TOTAL
13	Combine	51.70	2	724	172,441	4, 8, 12	------	------	PRE-POIA-TOTAL
14	SCS Runoff	2.066	2	722	5,425	------	------	------	COMP-GRASS
15	Combine	53.68	2	722	177,866	13, 14	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	14.09	2	722	45,948	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	1.684	2	722	4,796	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	21.84	2	724	69,809	------	------	------	PRE-NORTH-MEADOW
4	Combine	37.04	2	724	120,553	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	11.60	2	722	37,833	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	1.388	2	722	3,953	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	14.58	2	724	46,621	------	------	------	PRE-SOUTH-MEADOW
8	Combine	27.10	2	724	88,407	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	SCS Runoff	1.363	2	716	3,305	------	------	------	PRE-LOT20-80% OF IMP
10	SCS Runoff	0.162	2	720	371	------	------	------	PRE-LOT20-20% IMP AS MEADOW
11	SCS Runoff	2.494	2	720	5,710	------	------	------	PRE-LOT20-MEADOW
12	Combine	3.934	2	718	9,386	9, 10, 11	------	------	PRE-LOT20-TOTAL
13	Combine	66.30	2	724	218,346	4, 8, 12	------	------	PRE-POIA-TOTAL
14	SCS Runoff	2.741	2	720	7,150	------	------	------	COMP-GRASS
15	Combine	68.98	2	722	225,496	13, 14	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.186	2	716	432	------	------	------	20A-POST-IMP
2	SCS Runoff	0.007	2	722	29	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.274	2	716	635	------	------	------	20B-POST-IMP
4	SCS Runoff	0.018	2	722	72	------	------	------	20B-POST-LAWN
5	Combine	0.470	2	716	1,169	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	0.008	2	1064	1,159	5	368.88	816	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.225	2	716	527	------	------	------	20A-POST-IMP
2	SCS Runoff	0.017	2	720	51	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.331	2	716	775	------	------	------	20B-POST-IMP
4	SCS Runoff	0.044	2	720	129	------	------	------	20B-POST-LAWN
5	Combine	0.593	2	716	1,483	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	0.009	2	1112	1,474	5	369.33	1,063	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.283	2	716	671	------	------	------	20A-POST-IMP
2	SCS Runoff	0.038	2	720	94	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.417	2	716	986	------	------	------	20B-POST-IMP
4	SCS Runoff	0.094	2	720	235	------	------	------	20B-POST-LAWN
5	Combine	0.799	2	716	1,986	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	0.047	2	772	1,977	5	369.60	1,211	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.333	2	716	792	------	------	------	20A-POST-IMP
2	SCS Runoff	0.057	2	720	136	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.489	2	716	1,165	------	------	------	20B-POST-IMP
4	SCS Runoff	0.143	2	720	340	------	------	------	20B-POST-LAWN
5	Combine	0.980	2	716	2,433	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	0.197	2	728	2,424	5	369.74	1,283	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.403	2	716	965	------	------	------	20A-POST-IMP
2	SCS Runoff	0.088	2	720	204	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.592	2	716	1,420	------	------	------	20B-POST-IMP
4	SCS Runoff	0.220	2	720	510	------	------	------	20B-POST-LAWN
5	Combine	1.251	2	716	3,099	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	0.738	2	722	3,090	5	370.02	1,425	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.461	2	716	1,111	------	------	------	20A-POST-IMP
2	SCS Runoff	0.116	2	720	266	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.678	2	716	1,634	------	------	------	20B-POST-IMP
4	SCS Runoff	0.290	2	720	666	------	------	------	20B-POST-LAWN
5	Combine	1.487	2	718	3,677	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	1.056	2	722	3,668	5	370.22	1,517	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.525	2	716	1,269	------	------	------	20A-POST-IMP
2	SCS Runoff	0.148	2	720	338	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.772	2	716	1,866	------	------	------	20B-POST-IMP
4	SCS Runoff	0.369	2	720	845	------	------	------	20B-POST-LAWN
5	Combine	1.750	2	718	4,318	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	1.300	2	720	4,309	5	370.49	1,626	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.091	2	716	212	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	0.092	2	722	370	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	0.618	2	716	1,432	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.021	2	722	84	------	------	------	19B-POST-CAPT-LAWN
5	Combine	0.756	2	718	2,097	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	0.000	2	610	0	5	392.66	857	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.110	2	716	258	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	0.224	2	720	659	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	0.746	2	716	1,747	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.051	2	720	149	------	------	------	19B-POST-CAPT-LAWN
5	Combine	1.055	2	718	2,814	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	0.000	2	1540	0	5	392.99	1,215	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.139	2	716	329	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	0.483	2	720	1,204	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	0.939	2	716	2,223	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.109	2	720	273	------	------	------	19B-POST-CAPT-LAWN
5	Combine	1.581	2	718	4,028	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	0.000	2	492	0	5	393.58	1,874	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.163	2	716	388	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	0.733	2	720	1,743	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	1.102	2	716	2,625	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.166	2	720	395	------	------	------	19B-POST-CAPT-LAWN
5	Combine	2.066	2	718	5,151	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	0.116	2	750	418	5	393.93	2,274	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.197	2	716	473	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	1.128	2	720	2,611	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	1.334	2	716	3,199	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.255	2	720	591	------	------	------	19B-POST-CAPT-LAWN
5	Combine	2.809	2	718	6,874	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	0.767	2	726	1,597	5	394.29	2,663	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.226	2	716	545	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	1.485	2	720	3,409	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	1.528	2	716	3,682	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.336	2	720	772	------	------	------	19B-POST-CAPT-LAWN
5	Combine	3.467	2	718	8,407	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	1.316	2	726	2,724	5	394.70	3,058	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.257	2	716	622	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	1.891	2	720	4,329	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	1.739	2	716	4,204	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.428	2	720	981	------	------	------	19B-POST-CAPT-LAWN
5	Combine	4.206	2	718	10,136	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	1.924	2	724	4,052	5	395.39	3,520	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.219	2	716	508	------	------	------	16A-POST-IMP
2	SCS Runoff	0.205	2	722	830	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.260	2	716	602	------	------	------	16B-POST-IMP
4	SCS Runoff	0.022	2	722	90	------	------	------	16B-POST-LAWN
5	Combine	0.618	2	718	2,030	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	0.000	2	1110	0	5	400.68	587	16-POST-BED DISCHARGE
7	SCS Runoff	0.402	2	716	932	------	------	------	14A-POST-IMP
8	SCS Runoff	0.046	2	722	188	------	------	------	14A-POST-LAWN
9	SCS Runoff	0.548	2	716	1,271	------	------	------	14B-POST-IMP
10	SCS Runoff	0.045	2	722	182	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.428	2	716	991	------	------	------	15A-POST-IMP
12	SCS Runoff	0.084	2	722	341	------	------	------	15A-POST-LAWN
13	Combine	1.445	2	716	3,904	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	0.236	2	728	1,292	13	387.27	1,782	14-POST-BED DISCHARGE
15	SCS Runoff	0.281	2	716	652	------	------	------	17A-POST-IMP
16	SCS Runoff	0.097	2	722	393	------	------	------	17A-POST-LAWN
17	SCS Runoff	0.084	2	716	195	------	------	------	17B-POST-IMP
18	SCS Runoff	0.051	2	722	204	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.175	2	716	407	------	------	------	17C-POST-IMP
20	SCS Runoff	0.013	2	722	53	------	------	------	17C-POST-LAWN
21	Combine	0.630	2	718	1,904	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.000	2	386	0	21	405.03	954	17-POST-BED DISCHARGE
23	SCS Runoff	0.216	2	716	500	------	------	------	18A-POST-IMP
24	SCS Runoff	0.044	2	722	177	------	------	------	18A-POST-LAWN
25	SCS Runoff	0.420	2	716	974	------	------	------	18B/C-POST-IMP
26	SCS Runoff	0.020	2	722	83	------	------	------	18B/C-POST-LAWN
27	Combine	0.661	2	716	1,734	23, 24, 25, 26	------	------	18-POST-BED INFLOW
28	Reservoir	0.000	2	1650	0	27	401.38	820	18-POST-BED DISCHARGE
29	SCS Runoff	0.260	2	716	602	------	------	------	13A/B-POST-IMP
30	SCS Runoff	0.061	2	722	248	------	------	------	13A/B-POST-LAWN
31	SCS Runoff	0.186	2	716	432	------	------	------	13B-POST-IMP
32	SCS Runoff	0.065	2	722	264	------	------	------	13B-POST-LAWN
33	Combine	0.515	2	718	1,546	29, 30, 31, 32	------	------	13-POST-BED INFLOW
34	Reservoir	0.000	2	580	0	33	383.33	1,039	13-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
35	SCS Runoff	0.325	2	716	754	------	------	------	12A-POST-IMP
36	SCS Runoff	0.047	2	722	192	------	------	------	12A-POST-LAWN
37	SCS Runoff	0.175	2	716	407	------	------	------	12B-POST-IMP
38	SCS Runoff	0.011	2	722	43	------	------	------	12B-POST-LAWN
39	SCS Runoff	0.230	2	716	534	------	------	------	12C-POST-IMP
40	SCS Runoff	0.009	2	720	30	------	------	------	12C-POST-LAWN
41	Combine	0.759	2	716	1,959	35, 36, 37, 38, 39, 40	------	------	12-POST-BED INFLOW
42	Reservoir	0.000	2	244	0	41	379.32	1,172	12-POST-BED DISCHARGE
43	Combine	0.236	2	728	1,292	6, 14, 22, 28, 34, 42	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.265	2	716	620	------	------	------	16A-POST-IMP
2	SCS Runoff	0.503	2	720	1,479	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.313	2	716	734	------	------	------	16B-POST-IMP
4	SCS Runoff	0.055	2	720	161	------	------	------	16B-POST-LAWN
5	Combine	1.033	2	718	2,995	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	0.000	2	n/a	0	5	401.00	996	16-POST-BED DISCHARGE
7	SCS Runoff	0.486	2	716	1,137	------	------	------	14A-POST-IMP
8	SCS Runoff	0.114	2	720	335	------	------	------	14A-POST-LAWN
9	SCS Runoff	0.662	2	716	1,550	------	------	------	14B-POST-IMP
10	SCS Runoff	0.110	2	720	324	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.517	2	716	1,209	------	------	------	15A-POST-IMP
12	SCS Runoff	0.206	2	720	608	------	------	------	15A-POST-LAWN
13	Combine	1.960	2	718	5,163	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	0.601	2	726	2,413	13	387.46	2,163	14-POST-BED DISCHARGE
15	SCS Runoff	0.340	2	716	796	------	------	------	17A-POST-IMP
16	SCS Runoff	0.238	2	720	700	------	------	------	17A-POST-LAWN
17	SCS Runoff	0.102	2	716	238	------	------	------	17B-POST-IMP
18	SCS Runoff	0.124	2	720	364	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.212	2	716	496	------	------	------	17C-POST-IMP
20	SCS Runoff	0.032	2	720	94	------	------	------	17C-POST-LAWN
21	Combine	0.963	2	718	2,688	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.000	2	326	0	21	405.41	1,460	17-POST-BED DISCHARGE
23	SCS Runoff	0.260	2	716	610	------	------	------	18A-POST-IMP
24	SCS Runoff	0.107	2	720	316	------	------	------	18A-POST-LAWN
25	SCS Runoff	0.508	2	716	1,189	------	------	------	18B/C-POST-IMP
26	SCS Runoff	0.050	2	720	148	------	------	------	18B/C-POST-LAWN
27	Combine	0.869	2	718	2,262	23, 24, 25, 26	------	------	18-POST-BED INFLOW
28	Reservoir	0.000	2	1292	0	27	401.74	1,113	18-POST-BED DISCHARGE
29	SCS Runoff	0.313	2	716	734	------	------	------	13A/B-POST-IMP
30	SCS Runoff	0.150	2	720	443	------	------	------	13A/B-POST-LAWN
31	SCS Runoff	0.225	2	716	527	------	------	------	13B-POST-IMP
32	SCS Runoff	0.160	2	720	470	------	------	------	13B-POST-LAWN
33	Combine	0.782	2	718	2,174	29, 30, 31, 32	------	------	13-POST-BED INFLOW
34	Reservoir	0.000	2	n/a	0	33	383.80	1,558	13-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
35	SCS Runoff	0.393	2	716	920	------	------	------	12A-POST-IMP
36	SCS Runoff	0.116	2	720	342	------	------	------	12A-POST-LAWN
37	SCS Runoff	0.212	2	716	496	------	------	------	12B-POST-IMP
38	SCS Runoff	0.026	2	720	77	------	------	------	12B-POST-LAWN
39	SCS Runoff	0.278	2	716	651	------	------	------	12C-POST-IMP
40	SCS Runoff	0.022	2	718	53	------	------	------	12C-POST-LAWN
41	Combine	0.988	2	718	2,539	35, 36, 37, 38, 39, 40	------	------	12-POST-BED INFLOW
42	Reservoir	0.000	2	202	0	41	379.64	1,575	12-POST-BED DISCHARGE
43	Combine	0.601	2	726	2,413	6, 14, 22, 28, 34, 42	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.334	2	716	789	------	------	------	16A-POST-IMP
2	SCS Runoff	1.083	2	720	2,703	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.395	2	716	934	------	------	------	16B-POST-IMP
4	SCS Runoff	0.118	2	720	295	------	------	------	16B-POST-LAWN
5	Combine	1.815	2	718	4,720	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	0.000	2	674	0	5	401.57	1,845	16-POST-BED DISCHARGE
7	SCS Runoff	0.611	2	716	1,447	------	------	------	14A-POST-IMP
8	SCS Runoff	0.245	2	720	611	------	------	------	14A-POST-LAWN
9	SCS Runoff	0.834	2	716	1,973	------	------	------	14B-POST-IMP
10	SCS Runoff	0.238	2	720	593	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.650	2	716	1,539	------	------	------	15A-POST-IMP
12	SCS Runoff	0.445	2	720	1,110	------	------	------	15A-POST-LAWN
13	Combine	2.864	2	718	7,272	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	1.116	2	724	4,384	13	387.77	2,792	14-POST-BED DISCHARGE
15	SCS Runoff	0.428	2	716	1,013	------	------	------	17A-POST-IMP
16	SCS Runoff	0.513	2	720	1,279	------	------	------	17A-POST-LAWN
17	SCS Runoff	0.128	2	716	303	------	------	------	17B-POST-IMP
18	SCS Runoff	0.266	2	720	665	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.267	2	716	631	------	------	------	17C-POST-IMP
20	SCS Runoff	0.069	2	720	172	------	------	------	17C-POST-LAWN
21	Combine	1.576	2	718	4,063	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.000	2	266	0	21	406.07	2,410	17-POST-BED DISCHARGE
23	SCS Runoff	0.328	2	716	776	------	------	------	18A-POST-IMP
24	SCS Runoff	0.231	2	720	577	------	------	------	18A-POST-LAWN
25	SCS Runoff	0.639	2	716	1,513	------	------	------	18B/C-POST-IMP
26	SCS Runoff	0.108	2	720	270	------	------	------	18B/C-POST-LAWN
27	Combine	1.239	2	718	3,135	23, 24, 25, 26	------	------	18-POST-BED INFLOW
28	Reservoir	0.000	2	n/a	0	27	402.35	1,627	18-POST-BED DISCHARGE
29	SCS Runoff	0.395	2	716	934	------	------	------	13A/B-POST-IMP
30	SCS Runoff	0.324	2	720	809	------	------	------	13A/B-POST-LAWN
31	SCS Runoff	0.283	2	716	671	------	------	------	13B-POST-IMP
32	SCS Runoff	0.344	2	720	859	------	------	------	13B-POST-LAWN
33	Combine	1.270	2	718	3,273	29, 30, 31, 32	------	------	13-POST-BED INFLOW
34	Reservoir	0.008	2	1148	134	33	384.54	2,392	13-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
35	SCS Runoff	0.495	2	716	1,171	------	------	------	12A-POST-IMP
36	SCS Runoff	0.250	2	720	624	------	------	------	12A-POST-LAWN
37	SCS Runoff	0.267	2	716	631	------	------	------	12B-POST-IMP
38	SCS Runoff	0.057	2	720	141	------	------	------	12B-POST-LAWN
39	SCS Runoff	0.350	2	716	829	------	------	------	12C-POST-IMP
40	SCS Runoff	0.046	2	718	97	------	------	------	12C-POST-LAWN
41	Combine	1.393	2	718	3,493	35, 36, 37, 38, 39, 40	------	------	12-POST-BED INFLOW
42	Reservoir	0.000	2	836	0	41	380.18	2,267	12-POST-BED DISCHARGE
43	Combine	1.116	2	724	4,518	6, 14, 22, 28, 34, 42	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.391	2	716	932	------	------	------	16A-POST-IMP
2	SCS Runoff	1.645	2	720	3,913	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.463	2	716	1,103	------	------	------	16B-POST-IMP
4	SCS Runoff	0.179	2	720	427	------	------	------	16B-POST-LAWN
5	Combine	2.559	2	718	6,374	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	0.000	2	n/a	0	5	402.12	2,730	16-POST-BED DISCHARGE
7	SCS Runoff	0.717	2	716	1,708	------	------	------	14A-POST-IMP
8	SCS Runoff	0.372	2	720	885	------	------	------	14A-POST-LAWN
9	SCS Runoff	0.978	2	716	2,330	------	------	------	14B-POST-IMP
10	SCS Runoff	0.361	2	720	858	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.763	2	716	1,817	------	------	------	15A-POST-IMP
12	SCS Runoff	0.675	2	720	1,607	------	------	------	15A-POST-LAWN
13	Combine	3.692	2	718	9,205	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	1.443	2	724	6,225	13	388.07	3,401	14-POST-BED DISCHARGE
15	SCS Runoff	0.502	2	716	1,196	------	------	------	17A-POST-IMP
16	SCS Runoff	0.779	2	720	1,852	------	------	------	17A-POST-LAWN
17	SCS Runoff	0.150	2	716	357	------	------	------	17B-POST-IMP
18	SCS Runoff	0.405	2	720	962	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.313	2	716	745	------	------	------	17C-POST-IMP
20	SCS Runoff	0.105	2	720	250	------	------	------	17C-POST-LAWN
21	Combine	2.152	2	718	5,363	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.028	2	894	288	21	406.59	3,159	17-POST-BED DISCHARGE
23	SCS Runoff	0.385	2	716	916	------	------	------	18A-POST-IMP
24	SCS Runoff	0.351	2	720	835	------	------	------	18A-POST-LAWN
25	SCS Runoff	0.750	2	716	1,786	------	------	------	18B/C-POST-IMP
26	SCS Runoff	0.164	2	720	390	------	------	------	18B/C-POST-LAWN
27	Combine	1.575	2	718	3,928	23, 24, 25, 26	------	------	18-POST-BED INFLOW
28	Reservoir	0.094	2	750	357	27	402.66	1,883	18-POST-BED DISCHARGE
29	SCS Runoff	0.463	2	716	1,103	------	------	------	13A/B-POST-IMP
30	SCS Runoff	0.492	2	720	1,171	------	------	------	13A/B-POST-LAWN
31	SCS Runoff	0.333	2	716	792	------	------	------	13B-POST-IMP
32	SCS Runoff	0.523	2	720	1,244	------	------	------	13B-POST-LAWN
33	Combine	1.730	2	718	4,310	29, 30, 31, 32	------	------	13-POST-BED INFLOW
34	Reservoir	0.076	2	806	1,112	33	384.65	2,504	13-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
35	SCS Runoff	0.580	2	716	1,382	------	------	------	12A-POST-IMP
36	SCS Runoff	0.380	2	720	903	------	------	------	12A-POST-LAWN
37	SCS Runoff	0.313	2	716	745	------	------	------	12B-POST-IMP
38	SCS Runoff	0.086	2	720	204	------	------	------	12B-POST-LAWN
39	SCS Runoff	0.411	2	716	978	------	------	------	12C-POST-IMP
40	SCS Runoff	0.069	2	718	140	------	------	------	12C-POST-LAWN
41	Combine	1.758	2	718	4,354	35, 36, 37, 38, 39, 40	------	------	12-POST-BED INFLOW
42	Reservoir	0.000	2	798	0	41	380.69	2,908	12-POST-BED DISCHARGE
43	Combine	1.443	2	724	7,982	6, 14, 22, 28, 34, 42	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.474	2	716	1,136	------	------	------	16A-POST-IMP
2	SCS Runoff	2.531	2	720	5,860	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.560	2	716	1,344	------	------	------	16B-POST-IMP
4	SCS Runoff	0.276	2	720	639	------	------	------	16B-POST-LAWN
5	Combine	3.724	2	718	8,979	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	0.393	2	736	1,232	5	402.61	3,504	16-POST-BED DISCHARGE
7	SCS Runoff	0.868	2	716	2,082	------	------	------	14A-POST-IMP
8	SCS Runoff	0.573	2	720	1,326	------	------	------	14A-POST-LAWN
9	SCS Runoff	1.184	2	716	2,839	------	------	------	14B-POST-IMP
10	SCS Runoff	0.555	2	720	1,285	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.923	2	716	2,215	------	------	------	15A-POST-IMP
12	SCS Runoff	1.040	2	720	2,407	------	------	------	15A-POST-LAWN
13	Combine	4.951	2	718	12,153	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	1.848	2	726	9,062	13	388.54	4,362	14-POST-BED DISCHARGE
15	SCS Runoff	0.608	2	716	1,457	------	------	------	17A-POST-IMP
16	SCS Runoff	1.198	2	720	2,774	------	------	------	17A-POST-LAWN
17	SCS Runoff	0.182	2	716	435	------	------	------	17B-POST-IMP
18	SCS Runoff	0.623	2	720	1,441	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.379	2	716	909	------	------	------	17C-POST-IMP
20	SCS Runoff	0.162	2	720	374	------	------	------	17C-POST-LAWN
21	Combine	3.047	2	718	7,390	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.303	2	746	2,028	21	406.81	3,472	17-POST-BED DISCHARGE
23	SCS Runoff	0.466	2	716	1,117	------	------	------	18A-POST-IMP
24	SCS Runoff	0.540	2	720	1,251	------	------	------	18A-POST-LAWN
25	SCS Runoff	0.908	2	716	2,177	------	------	------	18B/C-POST-IMP
26	SCS Runoff	0.253	2	720	585	------	------	------	18B/C-POST-LAWN
27	Combine	2.083	2	718	5,129	23, 24, 25, 26	------	------	18-POST-BED INFLOW
28	Reservoir	0.650	2	726	1,231	27	402.99	2,129	18-POST-BED DISCHARGE
29	SCS Runoff	0.560	2	716	1,344	------	------	------	13A/B-POST-IMP
30	SCS Runoff	0.758	2	720	1,754	------	------	------	13A/B-POST-LAWN
31	SCS Runoff	0.403	2	716	965	------	------	------	13B-POST-IMP
32	SCS Runoff	0.805	2	720	1,863	------	------	------	13B-POST-LAWN
33	Combine	2.442	2	718	5,926	29, 30, 31, 32	------	------	13-POST-BED INFLOW
34	Reservoir	0.421	2	732	2,684	33	384.87	2,742	13-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
35	SCS Runoff	0.702	2	716	1,685	------	------	------	12A-POST-IMP
36	SCS Runoff	0.584	2	720	1,353	------	------	------	12A-POST-LAWN
37	SCS Runoff	0.379	2	716	909	------	------	------	12B-POST-IMP
38	SCS Runoff	0.132	2	720	306	------	------	------	12B-POST-LAWN
39	SCS Runoff	0.497	2	716	1,192	------	------	------	12C-POST-IMP
40	SCS Runoff	0.105	2	718	210	------	------	------	12C-POST-LAWN
41	Combine	2.309	2	718	5,655	35, 36, 37, 38, 39, 40	------	------	12-POST-BED INFLOW
42	Reservoir	0.071	2	800	639	41	381.14	3,427	12-POST-BED DISCHARGE
43	Combine	3.236	2	730	16,875	6, 14, 22, 28, 34, 42	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.543	2	716	1,307	------	------	------	16A-POST-IMP
2	SCS Runoff	3.333	2	720	7,651	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.642	2	716	1,547	------	------	------	16B-POST-IMP
4	SCS Runoff	0.363	2	720	834	------	------	------	16B-POST-LAWN
5	Combine	4.771	2	718	11,340	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	1.036	2	728	2,823	5	403.10	4,216	16-POST-BED DISCHARGE
7	SCS Runoff	0.995	2	716	2,396	------	------	------	14A-POST-IMP
8	SCS Runoff	0.754	2	720	1,731	------	------	------	14A-POST-LAWN
9	SCS Runoff	1.357	2	716	3,268	------	------	------	14B-POST-IMP
10	SCS Runoff	0.731	2	720	1,678	------	------	------	14B-POST-LAWN
11	SCS Runoff	1.058	2	716	2,549	------	------	------	15A-POST-IMP
12	SCS Runoff	1.369	2	720	3,142	------	------	------	15A-POST-LAWN
13	Combine	6.063	2	718	14,763	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	2.168	2	726	11,586	13	389.00	5,223	14-POST-BED DISCHARGE
15	SCS Runoff	0.696	2	716	1,677	------	------	------	17A-POST-IMP
16	SCS Runoff	1.578	2	720	3,622	------	------	------	17A-POST-LAWN
17	SCS Runoff	0.208	2	716	501	------	------	------	17B-POST-IMP
18	SCS Runoff	0.820	2	720	1,882	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.434	2	716	1,046	------	------	------	17C-POST-IMP
20	SCS Runoff	0.213	2	720	488	------	------	------	17C-POST-LAWN
21	Combine	3.847	2	718	9,216	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.961	2	728	3,718	21	407.16	3,913	17-POST-BED DISCHARGE
23	SCS Runoff	0.534	2	716	1,285	------	------	------	18A-POST-IMP
24	SCS Runoff	0.711	2	720	1,633	------	------	------	18A-POST-LAWN
25	SCS Runoff	1.040	2	716	2,505	------	------	------	18B/C-POST-IMP
26	SCS Runoff	0.333	2	720	763	------	------	------	18B/C-POST-LAWN
27	Combine	2.529	2	718	6,187	23, 24, 25, 26	------	------	18-POST-BED INFLOW
28	Reservoir	1.192	2	724	2,050	27	403.34	2,367	18-POST-BED DISCHARGE
29	SCS Runoff	0.642	2	716	1,547	------	------	------	13A/B-POST-IMP
30	SCS Runoff	0.998	2	720	2,290	------	------	------	13A/B-POST-LAWN
31	SCS Runoff	0.461	2	716	1,111	------	------	------	13B-POST-IMP
32	SCS Runoff	1.059	2	720	2,432	------	------	------	13B-POST-LAWN
33	Combine	3.078	2	718	7,380	29, 30, 31, 32	------	------	13-POST-BED INFLOW
34	Reservoir	1.105	2	726	4,110	33	385.27	3,115	13-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
35	SCS Runoff	0.805	2	716	1,939	------	------	------	12A-POST-IMP
36	SCS Runoff	0.769	2	720	1,766	------	------	------	12A-POST-LAWN
37	SCS Runoff	0.434	2	716	1,046	------	------	------	12B-POST-IMP
38	SCS Runoff	0.174	2	720	399	------	------	------	12B-POST-LAWN
39	SCS Runoff	0.570	2	716	1,372	------	------	------	12C-POST-IMP
40	SCS Runoff	0.137	2	718	275	------	------	------	12C-POST-LAWN
41	Combine	2.792	2	718	6,797	35, 36, 37, 38, 39, 40	------	------	12-POST-BED INFLOW
42	Reservoir	0.294	2	740	1,642	41	381.30	3,589	12-POST-BED DISCHARGE
43	Combine	6.398	2	728	25,930	6, 14, 22, 28, 34, 42	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.617	2	716	1,493	------	------	------	16A-POST-IMP
2	SCS Runoff	4.245	2	720	9,717	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.731	2	716	1,766	------	------	------	16B-POST-IMP
4	SCS Runoff	0.463	2	720	1,060	------	------	------	16B-POST-LAWN
5	Combine	5.959	2	718	14,036	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	1.795	2	728	4,724	5	403.94	5,041	16-POST-BED DISCHARGE
7	SCS Runoff	1.132	2	716	2,737	------	------	------	14A-POST-IMP
8	SCS Runoff	0.960	2	720	2,198	------	------	------	14A-POST-LAWN
9	SCS Runoff	1.544	2	716	3,732	------	------	------	14B-POST-IMP
10	SCS Runoff	0.931	2	720	2,131	------	------	------	14B-POST-LAWN
11	SCS Runoff	1.204	2	716	2,911	------	------	------	15A-POST-IMP
12	SCS Runoff	1.743	2	720	3,991	------	------	------	15A-POST-LAWN
13	Combine	7.307	2	718	17,698	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	2.531	2	726	14,433	13	389.60	6,174	14-POST-BED DISCHARGE
15	SCS Runoff	0.792	2	716	1,916	------	------	------	17A-POST-IMP
16	SCS Runoff	2.009	2	720	4,599	------	------	------	17A-POST-LAWN
17	SCS Runoff	0.237	2	716	572	------	------	------	17B-POST-IMP
18	SCS Runoff	1.044	2	720	2,390	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.494	2	716	1,194	------	------	------	17C-POST-IMP
20	SCS Runoff	0.271	2	720	620	------	------	------	17C-POST-LAWN
21	Combine	4.752	2	718	11,291	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	1.695	2	726	5,686	21	407.85	4,535	17-POST-BED DISCHARGE
23	SCS Runoff	0.607	2	716	1,468	------	------	------	18A-POST-IMP
24	SCS Runoff	0.906	2	720	2,074	------	------	------	18A-POST-LAWN
25	SCS Runoff	1.183	2	716	2,861	------	------	------	18B/C-POST-IMP
26	SCS Runoff	0.424	2	720	969	------	------	------	18B/C-POST-LAWN
27	Combine	3.027	2	718	7,372	23, 24, 25, 26	------	------	18-POST-BED INFLOW
28	Reservoir	1.722	2	722	3,011	27	403.88	2,624	18-POST-BED DISCHARGE
29	SCS Runoff	0.731	2	716	1,766	------	------	------	13A/B-POST-IMP
30	SCS Runoff	1.271	2	720	2,908	------	------	------	13A/B-POST-LAWN
31	SCS Runoff	0.525	2	716	1,269	------	------	------	13B-POST-IMP
32	SCS Runoff	1.349	2	720	3,089	------	------	------	13B-POST-LAWN
33	Combine	3.798	2	718	9,032	29, 30, 31, 32	------	------	13-POST-BED INFLOW
34	Reservoir	1.777	2	724	5,733	33	385.95	3,547	13-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
35	SCS Runoff	0.916	2	716	2,214	------	------	------	12A-POST-IMP
36	SCS Runoff	0.980	2	720	2,243	------	------	------	12A-POST-LAWN
37	SCS Runoff	0.494	2	716	1,194	------	------	------	12B-POST-IMP
38	SCS Runoff	0.222	2	720	507	------	------	------	12B-POST-LAWN
39	SCS Runoff	0.648	2	716	1,567	------	------	------	12C-POST-IMP
40	SCS Runoff	0.174	2	718	349	------	------	------	12C-POST-LAWN
41	Combine	3.330	2	718	8,075	35, 36, 37, 38, 39, 40	------	------	12-POST-BED INFLOW
42	Reservoir	0.978	2	726	2,817	41	381.67	3,898	12-POST-BED DISCHARGE
43	Combine	10.29	2	726	36,404	6, 14, 22, 28, 34, 42	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.559	2	716	1,296	------	------	------	11A-POST-IMP
2	SCS Runoff	0.077	2	722	311	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.077	2	716	178	------	------	------	11B-POST-IMP
4	SCS Runoff	0.031	2	722	124	------	------	------	11B-POST-LAWN
5	Combine	0.683	2	718	1,909	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	0.281	2	724	900	5	363.55	751	11-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.676	2	716	1,581	------	------	------	11A-POST-IMP
2	SCS Runoff	0.188	2	720	554	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.093	2	716	217	------	------	------	11B-POST-IMP
4	SCS Runoff	0.075	2	720	221	------	------	------	11B-POST-LAWN
5	Combine	0.961	2	718	2,574	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	0.542	2	722	1,528	5	363.68	886	11-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.850	2	716	2,012	------	------	------	11A-POST-IMP
2	SCS Runoff	0.406	2	720	1,013	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.117	2	716	276	------	------	------	11B-POST-IMP
4	SCS Runoff	0.162	2	720	404	------	------	------	11B-POST-LAWN
5	Combine	1.453	2	718	3,706	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	0.923	2	722	2,613	5	363.88	1,097	11-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.998	2	716	2,376	------	------	------	11A-POST-IMP
2	SCS Runoff	0.616	2	720	1,466	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.137	2	716	326	------	------	------	11B-POST-IMP
4	SCS Runoff	0.246	2	720	586	------	------	------	11B-POST-LAWN
5	Combine	1.907	2	718	4,754	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	1.175	2	722	3,631	5	364.07	1,304	11-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1.208	2	716	2,896	------	------	------	11A-POST-IMP
2	SCS Runoff	0.948	2	720	2,196	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.166	2	716	397	------	------	------	11B-POST-IMP
4	SCS Runoff	0.379	2	720	877	------	------	------	11B-POST-LAWN
5	Combine	2.604	2	718	6,367	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	1.496	2	724	5,204	5	364.38	1,645	11-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1.384	2	716	3,333	------	------	------	11A-POST-IMP
2	SCS Runoff	1.249	2	720	2,867	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.190	2	716	457	------	------	------	11B-POST-IMP
4	SCS Runoff	0.499	2	720	1,145	------	------	------	11B-POST-LAWN
5	Combine	3.222	2	718	7,803	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	1.753	2	724	6,611	5	364.67	1,979	11-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1.575	2	716	3,806	------	------	------	11A-POST-IMP
2	SCS Runoff	1.591	2	720	3,641	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.216	2	716	522	------	------	------	11B-POST-IMP
4	SCS Runoff	0.635	2	720	1,454	------	------	------	11B-POST-LAWN
5	Combine	3.917	2	718	9,424	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	2.020	2	724	8,205	5	365.03	2,376	11-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.143	2	716	330	------	------	------	6A-POST-IMP
2	SCS Runoff	0.012	2	722	48	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.263	2	716	610	------	------	------	6B-POST-IMP
4	SCS Runoff	0.004	2	722	14	------	------	------	6B-POST-LAWN
5	Combine	0.412	2	716	1,003	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.000	2	412	0	5	378.96	490	6-POST-BED DISCHARGE
7	SCS Runoff	0.157	2	716	364	------	------	------	7A-POST-IMP
8	SCS Runoff	0.054	2	722	217	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.245	2	716	568	------	------	------	7B-POST-IMP
10	SCS Runoff	0.015	2	722	63	------	------	------	7B-POST-LAWN
11	Combine	0.433	2	718	1,211	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	0.000	2	1440	0	11	380.31	547	7-POST-BED DISCHARGE
13	SCS Runoff	0.230	2	716	534	------	------	------	8A-POST-IMP
14	SCS Runoff	0.069	2	722	277	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.274	2	716	635	------	------	------	8B-POST-IMP
16	SCS Runoff	0.057	2	722	231	------	------	------	8B-POST-LAWN
17	Combine	0.570	2	718	1,677	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.000	2	1268	0	17	376.82	607	8-POST-DISCHARGE
19	SCS Runoff	0.025	2	722	99	------	------	------	9A-POST-LAWN
20	SCS Runoff	0.599	2	716	1,389	------	------	------	9B-POST-IMP
21	SCS Runoff	0.094	2	722	379	------	------	------	9B-POST-LAWN
22	Combine	0.656	2	718	1,868	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	0.000	2	502	0	22	371.24	708	9-POST-BED DISCHARGE
24	SCS Runoff	0.157	2	716	364	------	------	------	10A-POST-IMP
25	SCS Runoff	0.006	2	722	25	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.318	2	716	737	------	------	------	10B-POST-IMP
27	SCS Runoff	0.059	2	722	239	------	------	------	10B-POST-LAWN
28	Combine	0.500	2	716	1,365	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.000	2	306	0	28	368.16	733	10-POST-BED DISCHARGE
30	Combine	0.000	2	358	0	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.172	2	716	403	------	------	------	6A-POST-IMP
2	SCS Runoff	0.029	2	720	86	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.318	2	716	744	------	------	------	6B-POST-IMP
4	SCS Runoff	0.009	2	720	26	------	------	------	6B-POST-LAWN
5	Combine	0.513	2	716	1,259	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.000	2	356	0	5	379.40	631	6-POST-BED DISCHARGE
7	SCS Runoff	0.190	2	716	444	------	------	------	7A-POST-IMP
8	SCS Runoff	0.131	2	720	386	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.296	2	716	693	------	------	------	7B-POST-IMP
10	SCS Runoff	0.038	2	720	112	------	------	------	7B-POST-LAWN
11	Combine	0.610	2	718	1,635	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	0.000	2	326	0	11	380.71	780	7-POST-BED DISCHARGE
13	SCS Runoff	0.278	2	716	651	------	------	------	8A-POST-IMP
14	SCS Runoff	0.168	2	720	494	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.331	2	716	775	------	------	------	8B-POST-IMP
16	SCS Runoff	0.140	2	720	412	------	------	------	8B-POST-LAWN
17	Combine	0.847	2	718	2,333	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.000	2	742	0	17	377.10	915	8-POST-DISCHARGE
19	SCS Runoff	0.060	2	720	177	------	------	------	9A-POST-LAWN
20	SCS Runoff	0.724	2	716	1,695	------	------	------	9B-POST-IMP
21	SCS Runoff	0.230	2	720	676	------	------	------	9B-POST-LAWN
22	Combine	0.941	2	718	2,548	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	0.031	2	750	84	22	371.59	989	9-POST-BED DISCHARGE
24	SCS Runoff	0.190	2	716	444	------	------	------	10A-POST-IMP
25	SCS Runoff	0.015	2	720	45	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.384	2	716	899	------	------	------	10B-POST-IMP
27	SCS Runoff	0.145	2	720	426	------	------	------	10B-POST-LAWN
28	Combine	0.686	2	718	1,814	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.000	2	436	0	28	368.48	1,022	10-POST-BED DISCHARGE
30	Combine	0.031	2	750	84	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.217	2	716	513	------	------	------	6A-POST-IMP
2	SCS Runoff	0.063	2	720	157	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.400	2	716	947	------	------	------	6B-POST-IMP
4	SCS Runoff	0.019	2	720	47	------	------	------	6B-POST-LAWN
5	Combine	0.678	2	716	1,664	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.021	2	752	48	5	380.08	828	6-POST-BED DISCHARGE
7	SCS Runoff	0.239	2	716	566	------	------	------	7A-POST-IMP
8	SCS Runoff	0.283	2	720	705	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.372	2	716	881	------	------	------	7B-POST-IMP
10	SCS Runoff	0.082	2	720	204	------	------	------	7B-POST-LAWN
11	Combine	0.923	2	718	2,356	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	0.000	2	1876	0	11	381.41	1,205	7-POST-BED DISCHARGE
13	SCS Runoff	0.350	2	716	829	------	------	------	8A-POST-IMP
14	SCS Runoff	0.362	2	720	903	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.417	2	716	986	------	------	------	8B-POST-IMP
16	SCS Runoff	0.302	2	720	752	------	------	------	8B-POST-LAWN
17	Combine	1.351	2	718	3,471	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.000	2	1164	0	17	377.59	1,513	8-POST-DISCHARGE
19	SCS Runoff	0.129	2	720	323	------	------	------	9A-POST-LAWN
20	SCS Runoff	0.912	2	716	2,157	------	------	------	9B-POST-IMP
21	SCS Runoff	0.495	2	720	1,235	------	------	------	9B-POST-LAWN
22	Combine	1.452	2	718	3,715	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	0.444	2	726	765	22	371.89	1,237	9-POST-BED DISCHARGE
24	SCS Runoff	0.239	2	716	566	------	------	------	10A-POST-IMP
25	SCS Runoff	0.033	2	720	82	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.484	2	716	1,144	------	------	------	10B-POST-IMP
27	SCS Runoff	0.312	2	720	778	------	------	------	10B-POST-LAWN
28	Combine	1.011	2	718	2,569	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.000	2	888	0	28	369.02	1,538	10-POST-BED DISCHARGE
30	Combine	0.444	2	726	813	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.254	2	716	606	------	------	------	6A-POST-IMP
2	SCS Runoff	0.095	2	720	227	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.469	2	716	1,118	------	------	------	6B-POST-IMP
4	SCS Runoff	0.029	2	720	68	------	------	------	6B-POST-LAWN
5	Combine	0.822	2	716	2,019	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.259	2	724	277	5	380.29	882	6-POST-BED DISCHARGE
7	SCS Runoff	0.280	2	716	668	------	------	------	7A-POST-IMP
8	SCS Runoff	0.429	2	720	1,021	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.437	2	716	1,041	------	------	------	7B-POST-IMP
10	SCS Runoff	0.124	2	720	295	------	------	------	7B-POST-LAWN
11	Combine	1.213	2	718	3,025	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	0.105	2	744	385	11	381.68	1,356	7-POST-BED DISCHARGE
13	SCS Runoff	0.411	2	716	978	------	------	------	8A-POST-IMP
14	SCS Runoff	0.550	2	720	1,307	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.489	2	716	1,165	------	------	------	8B-POST-IMP
16	SCS Runoff	0.458	2	720	1,090	------	------	------	8B-POST-LAWN
17	Combine	1.822	2	718	4,540	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.000	2	1370	0	17	378.06	2,117	8-POST-DISCHARGE
19	SCS Runoff	0.197	2	720	468	------	------	------	9A-POST-LAWN
20	SCS Runoff	1.069	2	716	2,547	------	------	------	9B-POST-IMP
21	SCS Runoff	0.752	2	720	1,789	------	------	------	9B-POST-LAWN
22	Combine	1.927	2	718	4,803	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	0.935	2	724	1,489	22	372.14	1,450	9-POST-BED DISCHARGE
24	SCS Runoff	0.280	2	716	668	------	------	------	10A-POST-IMP
25	SCS Runoff	0.050	2	720	118	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.567	2	716	1,351	------	------	------	10B-POST-IMP
27	SCS Runoff	0.473	2	720	1,126	------	------	------	10B-POST-LAWN
28	Combine	1.309	2	718	3,263	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.000	2	852	0	28	369.53	2,027	10-POST-BED DISCHARGE
30	Combine	1.194	2	724	2,150	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.308	2	716	738	------	------	------	6A-POST-IMP
2	SCS Runoff	0.147	2	720	340	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.568	2	716	1,363	------	------	------	6B-POST-IMP
4	SCS Runoff	0.044	2	720	102	------	------	------	6B-POST-LAWN
5	Combine	1.035	2	716	2,543	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.775	2	720	637	5	380.55	941	6-POST-BED DISCHARGE
7	SCS Runoff	0.339	2	716	814	------	------	------	7A-POST-IMP
8	SCS Runoff	0.661	2	720	1,530	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.529	2	716	1,268	------	------	------	7B-POST-IMP
10	SCS Runoff	0.191	2	720	442	------	------	------	7B-POST-LAWN
11	Combine	1.658	2	718	4,054	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	0.700	2	724	1,166	11	382.01	1,540	7-POST-BED DISCHARGE
13	SCS Runoff	0.497	2	716	1,192	------	------	------	8A-POST-IMP
14	SCS Runoff	0.846	2	720	1,958	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.592	2	716	1,420	------	------	------	8B-POST-IMP
16	SCS Runoff	0.705	2	720	1,632	------	------	------	8B-POST-LAWN
17	Combine	2.551	2	718	6,202	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.000	2	482	0	17	378.84	3,086	8-POST-DISCHARGE
19	SCS Runoff	0.302	2	720	700	------	------	------	9A-POST-LAWN
20	SCS Runoff	1.294	2	716	3,104	------	------	------	9B-POST-IMP
21	SCS Runoff	1.157	2	720	2,679	------	------	------	9B-POST-LAWN
22	Combine	2.658	2	718	6,483	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	1.442	2	724	2,711	22	372.57	1,806	9-POST-BED DISCHARGE
24	SCS Runoff	0.339	2	716	814	------	------	------	10A-POST-IMP
25	SCS Runoff	0.076	2	720	177	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.687	2	716	1,647	------	------	------	10B-POST-IMP
27	SCS Runoff	0.728	2	720	1,686	------	------	------	10B-POST-LAWN
28	Combine	1.763	2	718	4,324	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.045	2	810	350	28	370.11	2,535	10-POST-BED DISCHARGE
30	Combine	2.680	2	722	4,864	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.353	2	716	850	------	------	------	6A-POST-IMP
2	SCS Runoff	0.193	2	720	444	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.651	2	716	1,568	------	------	------	6B-POST-IMP
4	SCS Runoff	0.058	2	720	133	------	------	------	6B-POST-LAWN
5	Combine	1.218	2	716	2,995	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	1.060	2	720	966	5	380.73	970	6-POST-BED DISCHARGE
7	SCS Runoff	0.389	2	716	937	------	------	------	7A-POST-IMP
8	SCS Runoff	0.870	2	720	1,997	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.606	2	716	1,460	------	------	------	7B-POST-IMP
10	SCS Runoff	0.251	2	720	577	------	------	------	7B-POST-LAWN
11	Combine	2.053	2	718	4,970	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	1.196	2	722	1,914	11	382.34	1,699	7-POST-BED DISCHARGE
13	SCS Runoff	0.570	2	716	1,372	------	------	------	8A-POST-IMP
14	SCS Runoff	1.114	2	720	2,556	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.678	2	716	1,634	------	------	------	8B-POST-IMP
16	SCS Runoff	0.928	2	720	2,130	------	------	------	8B-POST-LAWN
17	Combine	3.201	2	718	7,693	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.203	2	748	684	17	379.25	3,538	8-POST-DISCHARGE
19	SCS Runoff	0.398	2	720	914	------	------	------	9A-POST-LAWN
20	SCS Runoff	1.483	2	716	3,573	------	------	------	9B-POST-IMP
21	SCS Runoff	1.523	2	720	3,497	------	------	------	9B-POST-LAWN
22	Combine	3.307	2	718	7,984	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	1.821	2	724	3,881	22	373.01	2,145	9-POST-BED DISCHARGE
24	SCS Runoff	0.389	2	716	937	------	------	------	10A-POST-IMP
25	SCS Runoff	0.101	2	720	231	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.787	2	716	1,895	------	------	------	10B-POST-IMP
27	SCS Runoff	0.959	2	720	2,201	------	------	------	10B-POST-LAWN
28	Combine	2.165	2	718	5,264	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.223	2	742	1,142	28	370.27	2,654	10-POST-BED DISCHARGE
30	Combine	3.861	2	722	8,586	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.401	2	716	970	------	------	------	6A-POST-IMP
2	SCS Runoff	0.246	2	720	564	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.741	2	716	1,791	------	------	------	6B-POST-IMP
4	SCS Runoff	0.074	2	720	169	------	------	------	6B-POST-LAWN
5	Combine	1.420	2	716	3,494	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	1.310	2	718	1,344	5	380.94	998	6-POST-BED DISCHARGE
7	SCS Runoff	0.443	2	716	1,070	------	------	------	7A-POST-IMP
8	SCS Runoff	1.108	2	720	2,536	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.689	2	716	1,667	------	------	------	7B-POST-IMP
10	SCS Runoff	0.320	2	720	733	------	------	------	7B-POST-LAWN
11	Combine	2.497	2	718	6,006	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	1.711	2	722	2,796	11	382.87	1,878	7-POST-BED DISCHARGE
13	SCS Runoff	0.648	2	716	1,567	------	------	------	8A-POST-IMP
14	SCS Runoff	1.418	2	720	3,247	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.772	2	716	1,866	------	------	------	8B-POST-IMP
16	SCS Runoff	1.182	2	720	2,705	------	------	------	8B-POST-LAWN
17	Combine	3.935	2	718	9,385	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.919	2	728	1,871	17	379.63	3,876	8-POST-DISCHARGE
19	SCS Runoff	0.507	2	720	1,161	------	------	------	9A-POST-LAWN
20	SCS Runoff	1.688	2	716	4,080	------	------	------	9B-POST-IMP
21	SCS Runoff	1.940	2	720	4,441	------	------	------	9B-POST-LAWN
22	Combine	4.039	2	718	9,683	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	2.180	2	724	5,268	22	373.66	2,547	9-POST-BED DISCHARGE
24	SCS Runoff	0.443	2	716	1,070	------	------	------	10A-POST-IMP
25	SCS Runoff	0.128	2	720	293	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.895	2	716	2,164	------	------	------	10B-POST-IMP
27	SCS Runoff	1.221	2	720	2,796	------	------	------	10B-POST-LAWN
28	Combine	2.615	2	718	6,323	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.680	2	728	2,076	28	370.69	2,918	10-POST-BED DISCHARGE
30	Combine	5.696	2	724	13,355	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.270	2	716	627	------	------	------	1A-IMP
2	SCS Runoff	0.035	2	722	141	------	------	------	1A-LAWN
3	SCS Runoff	0.219	2	716	508	------	------	------	1B-IMP
4	SCS Runoff	0.006	2	722	25	------	------	------	1B-LAWN
5	Combine	0.506	2	716	1,302	1, 2, 3, 4	------	------	1-POST-BED INFLOW
6	Reservoir	0.000	2	1412	0	5	352.01	569	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.327	2	716	765	------	------	------	1A-IMP
2	SCS Runoff	0.086	2	720	252	------	------	------	1A-LAWN
3	SCS Runoff	0.265	2	716	620	------	------	------	1B-IMP
4	SCS Runoff	0.015	2	720	45	------	------	------	1B-LAWN
5	Combine	0.653	2	716	1,682	1, 2, 3, 4	------	------	1-POST-BED INFLOW
6	Reservoir	0.000	2	406	0	5	352.25	762	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.411	2	716	973	------	------	------	1A-IMP
2	SCS Runoff	0.185	2	720	461	------	------	------	1A-LAWN
3	SCS Runoff	0.334	2	716	789	------	------	------	1B-IMP
4	SCS Runoff	0.033	2	720	82	------	------	------	1B-LAWN
5	Combine	0.913	2	718	2,305	1, 2, 3, 4	------	------	1-POST-BED INFLOW
6	Reservoir	0.000	2	310	0	5	352.64	1,103	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.483	2	716	1,149	------	------	------	1A-IMP
2	SCS Runoff	0.280	2	720	667	------	------	------	1A-LAWN
3	SCS Runoff	0.391	2	716	932	------	------	------	1B-IMP
4	SCS Runoff	0.050	2	720	118	------	------	------	1B-LAWN
5	Combine	1.149	2	718	2,866	1, 2, 3, 4	------	------	1-POST-BED INFLOW
6	Reservoir	0.000	2	270	0	5	353.00	1,426	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.584	2	716	1,401	------	------	------	1A-IMP
2	SCS Runoff	0.432	2	720	999	------	------	------	1A-LAWN
3	SCS Runoff	0.474	2	716	1,136	------	------	------	1B-IMP
4	SCS Runoff	0.076	2	720	177	------	------	------	1B-LAWN
5	Combine	1.504	2	718	3,713	1, 2, 3, 4	------	------	1-POST-BED INFLOW
6	Reservoir	0.000	2	732	0	5	353.56	1,930	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.669	2	716	1,612	------	------	------	1A-IMP
2	SCS Runoff	0.568	2	720	1,305	------	------	------	1A-LAWN
3	SCS Runoff	0.543	2	716	1,307	------	------	------	1B-IMP
4	SCS Runoff	0.101	2	720	231	------	------	------	1B-LAWN
5	Combine	1.815	2	718	4,455	1, 2, 3, 4	------	------	1-POST-BED INFLOW
6	Reservoir	0.017	2	792	59	5	354.07	2,342	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.762	2	716	1,841	------	------	------	1A-IMP
2	SCS Runoff	0.724	2	720	1,657	------	------	------	1A-LAWN
3	SCS Runoff	0.617	2	716	1,493	------	------	------	1B-IMP
4	SCS Runoff	0.128	2	720	293	------	------	------	1B-LAWN
5	Combine	2.161	2	718	5,284	1, 2, 3, 4	------	------	1-POST-BED INFLOW
6	Reservoir	0.214	2	734	610	5	354.26	2,483	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.168	2	716	390	------	------	------	2A-POST-IMP
2	SCS Runoff	0.014	2	722	56	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.398	2	716	923	------	------	------	2B/C-POST-IMP
4	SCS Runoff	0.044	2	722	177	------	------	------	2B/C-POST-LAWN
5	SCS Runoff	0.048	2	716	110	------	------	------	2D-POST-IMP
6	SCS Runoff	0.023	2	722	94	------	------	------	2D-POST-LAWN
7	Combine	0.645	2	716	1,751	1, 2, 3, 4, 5, 6	------	------	2-POST-BED INFLOW
8	Reservoir	0.062	2	750	1,749	7	354.13	665	2-POST-BED DISCHARGE
9	SCS Runoff	0.263	2	716	610	------	------	------	3B-POST-IMP
10	SCS Runoff	0.024	2	722	96	------	------	------	3B-POST-LAWN
11	SCS Runoff	0.402	2	716	932	------	------	------	4B-POST-IMP
12	SCS Runoff	0.054	2	722	217	------	------	------	4B-POST-LAWN
13	Combine	0.695	2	716	1,855	9, 10, 11, 12	------	------	3-POST-BED INFLOW
14	Reservoir	0.045	2	774	1,853	13	358.25	818	3-POST-BED DISCHARGE
15	Combine	0.107	2	754	3,602	8, 14	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.203	2	716	475	------	------	------	2A-POST-IMP
2	SCS Runoff	0.034	2	720	100	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.481	2	716	1,127	------	------	------	2B/C-POST-IMP
4	SCS Runoff	0.107	2	720	316	------	------	------	2B/C-POST-LAWN
5	SCS Runoff	0.057	2	716	134	------	------	------	2D-POST-IMP
6	SCS Runoff	0.057	2	720	168	------	------	------	2D-POST-LAWN
7	Combine	0.879	2	718	2,320	1, 2, 3, 4, 5, 6	------	------	2-POST-BED INFLOW
8	Reservoir	0.071	2	756	2,319	7	354.44	925	2-POST-BED DISCHARGE
9	SCS Runoff	0.318	2	716	744	------	------	------	3B-POST-IMP
10	SCS Runoff	0.058	2	720	172	------	------	------	3B-POST-LAWN
11	SCS Runoff	0.486	2	716	1,137	------	------	------	4B-POST-IMP
12	SCS Runoff	0.131	2	720	386	------	------	------	4B-POST-LAWN
13	Combine	0.931	2	718	2,439	9, 10, 11, 12	------	------	3-POST-BED INFLOW
14	Reservoir	0.052	2	790	2,437	13	358.58	1,123	3-POST-BED DISCHARGE
15	Combine	0.123	2	768	4,756	8, 14	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.256	2	716	605	------	------	------	2A-POST-IMP
2	SCS Runoff	0.073	2	720	182	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.606	2	716	1,434	------	------	------	2B/C-POST-IMP
4	SCS Runoff	0.231	2	720	577	------	------	------	2B/C-POST-LAWN
5	SCS Runoff	0.072	2	716	171	------	------	------	2D-POST-IMP
6	SCS Runoff	0.123	2	720	307	------	------	------	2D-POST-LAWN
7	Combine	1.289	2	718	3,276	1, 2, 3, 4, 5, 6	------	------	2-POST-BED INFLOW
8	Reservoir	0.086	2	772	3,274	7	354.97	1,401	2-POST-BED DISCHARGE
9	SCS Runoff	0.400	2	716	947	------	------	------	3B-POST-IMP
10	SCS Runoff	0.126	2	720	314	------	------	------	3B-POST-LAWN
11	SCS Runoff	0.611	2	716	1,447	------	------	------	4B-POST-IMP
12	SCS Runoff	0.283	2	720	705	------	------	------	4B-POST-LAWN
13	Combine	1.346	2	718	3,413	9, 10, 11, 12	------	------	3-POST-BED INFLOW
14	Reservoir	0.062	2	810	3,411	13	359.14	1,670	3-POST-BED DISCHARGE
15	Combine	0.148	2	784	6,685	8, 14	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.300	2	716	714	------	------	------	2A-POST-IMP
2	SCS Runoff	0.111	2	720	263	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.711	2	716	1,693	------	------	------	2B/C-POST-IMP
4	SCS Runoff	0.351	2	720	835	------	------	------	2B/C-POST-LAWN
5	SCS Runoff	0.085	2	716	202	------	------	------	2D-POST-IMP
6	SCS Runoff	0.187	2	720	445	------	------	------	2D-POST-LAWN
7	Combine	1.665	2	718	4,153	1, 2, 3, 4, 5, 6	------	------	2-POST-BED INFLOW
8	Reservoir	0.101	2	780	4,151	7	355.49	1,864	2-POST-BED DISCHARGE
9	SCS Runoff	0.469	2	716	1,118	------	------	------	3B-POST-IMP
10	SCS Runoff	0.191	2	720	454	------	------	------	3B-POST-LAWN
11	SCS Runoff	0.717	2	716	1,708	------	------	------	4B-POST-IMP
12	SCS Runoff	0.429	2	720	1,021	------	------	------	4B-POST-LAWN
13	Combine	1.725	2	718	4,302	9, 10, 11, 12	------	------	3-POST-BED INFLOW
14	Reservoir	0.106	2	776	4,300	13	359.60	2,107	3-POST-BED DISCHARGE
15	Combine	0.207	2	776	8,451	8, 14	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.363	2	716	871	------	------	------	2A-POST-IMP
2	SCS Runoff	0.170	2	720	394	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.860	2	716	2,063	------	------	------	2B/C-POST-IMP
4	SCS Runoff	0.540	2	720	1,251	------	------	------	2B/C-POST-LAWN
5	SCS Runoff	0.103	2	716	246	------	------	------	2D-POST-IMP
6	SCS Runoff	0.288	2	720	666	------	------	------	2D-POST-LAWN
7	Combine	2.238	2	718	5,492	1, 2, 3, 4, 5, 6	------	------	2-POST-BED INFLOW
8	Reservoir	0.328	2	734	5,490	7	356.00	2,294	2-POST-BED DISCHARGE
9	SCS Runoff	0.568	2	716	1,363	------	------	------	3B-POST-IMP
10	SCS Runoff	0.294	2	720	680	------	------	------	3B-POST-LAWN
11	SCS Runoff	0.868	2	716	2,082	------	------	------	4B-POST-IMP
12	SCS Runoff	0.661	2	720	1,530	------	------	------	4B-POST-LAWN
13	Combine	2.301	2	718	5,655	9, 10, 11, 12	------	------	3-POST-BED INFLOW
14	Reservoir	0.544	2	728	5,652	13	359.90	2,381	3-POST-BED DISCHARGE
15	Combine	0.840	2	730	11,143	8, 14	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.416	2	716	1,002	------	------	------	2A-POST-IMP
2	SCS Runoff	0.224	2	720	515	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.986	2	716	2,374	------	------	------	2B/C-POST-IMP
4	SCS Runoff	0.711	2	720	1,633	------	------	------	2B/C-POST-LAWN
5	SCS Runoff	0.118	2	716	283	------	------	------	2D-POST-IMP
6	SCS Runoff	0.379	2	720	870	------	------	------	2D-POST-LAWN
7	Combine	2.744	2	718	6,678	1, 2, 3, 4, 5, 6	------	------	2-POST-BED INFLOW
8	Reservoir	1.014	2	726	6,676	7	356.36	2,548	2-POST-BED DISCHARGE
9	SCS Runoff	0.651	2	716	1,568	------	------	------	3B-POST-IMP
10	SCS Runoff	0.387	2	720	888	------	------	------	3B-POST-LAWN
11	SCS Runoff	0.995	2	716	2,396	------	------	------	4B-POST-IMP
12	SCS Runoff	0.870	2	720	1,997	------	------	------	4B-POST-LAWN
13	Combine	2.808	2	718	6,850	9, 10, 11, 12	------	------	3-POST-BED INFLOW
14	Reservoir	1.009	2	726	6,847	13	360.32	2,714	3-POST-BED DISCHARGE
15	Combine	2.023	2	726	13,524	8, 14	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.473	2	716	1,144	------	------	------	2A-POST-IMP
2	SCS Runoff	0.286	2	720	654	------	------	------	2A-POST-LAWN
3	SCS Runoff	1.122	2	716	2,712	------	------	------	2B/C-POST-IMP
4	SCS Runoff	0.906	2	720	2,074	------	------	------	2B/C-POST-LAWN
5	SCS Runoff	0.134	2	716	323	------	------	------	2D-POST-IMP
6	SCS Runoff	0.483	2	720	1,105	------	------	------	2D-POST-LAWN
7	Combine	3.311	2	718	8,012	1, 2, 3, 4, 5, 6	------	------	2-POST-BED INFLOW
8	Reservoir	1.651	2	724	8,011	7	356.97	2,844	2-POST-BED DISCHARGE
9	SCS Runoff	0.741	2	716	1,791	------	------	------	3B-POST-IMP
10	SCS Runoff	0.492	2	720	1,127	------	------	------	3B-POST-LAWN
11	SCS Runoff	1.132	2	716	2,737	------	------	------	4B-POST-IMP
12	SCS Runoff	1.108	2	720	2,536	------	------	------	4B-POST-LAWN
13	Combine	3.375	2	718	8,192	9, 10, 11, 12	------	------	3-POST-BED INFLOW
14	Reservoir	1.647	2	724	8,189	13	360.97	3,057	3-POST-BED DISCHARGE
15	Combine	3.298	2	724	16,200	8, 14	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	3.794	2	716	8,794	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	0.926	2	722	3,738	------	------	------	POST-BYPASS-GRASS
3	Combine	4.276	2	718	12,532	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	4.583	2	716	10,729	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	2.266	2	720	6,666	------	------	------	POST-BYPASS-GRASS
3	Combine	6.329	2	718	17,395	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	5.770	2	716	13,652	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	4.881	2	720	12,178	------	------	------	POST-BYPASS-GRASS
3	Combine	10.06	2	718	25,830	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	6.768	2	716	16,120	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	7.411	2	720	17,632	------	------	------	POST-BYPASS-GRASS
3	Combine	13.54	2	718	33,753	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	8.193	2	716	19,648	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	11.41	2	720	26,406	------	------	------	POST-BYPASS-GRASS
3	Combine	18.94	2	718	46,054	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	9.388	2	716	22,612	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	15.02	2	720	34,476	------	------	------	POST-BYPASS-GRASS
3	Combine	23.75	2	718	57,088	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	10.68	2	716	25,824	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	19.13	2	720	43,783	------	------	------	POST-BYPASS-GRASS
3	Combine	29.17	2	718	69,607	1, 2	------	------	POST=BYPASS-TOTAL

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 1 - LOT 1 INFILTRATION BASIN

Pond Data

UG Chambers -Invert elev. = 351.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 65.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	351.00	n/a	0	0
0.40	351.40	n/a	148	148
0.80	351.80	n/a	258	406
1.20	352.20	n/a	314	720
1.60	352.60	n/a	346	1,066
2.00	353.00	n/a	361	1,427
2.40	353.40	n/a	361	1,788
2.80	353.80	n/a	345	2,133
3.20	354.20	n/a	314	2,447
3.60	354.60	n/a	258	2,705
4.00	355.00	n/a	148	2,853

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 354.00	0.00	0.00	0.00
Length (ft)	= 43.60	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

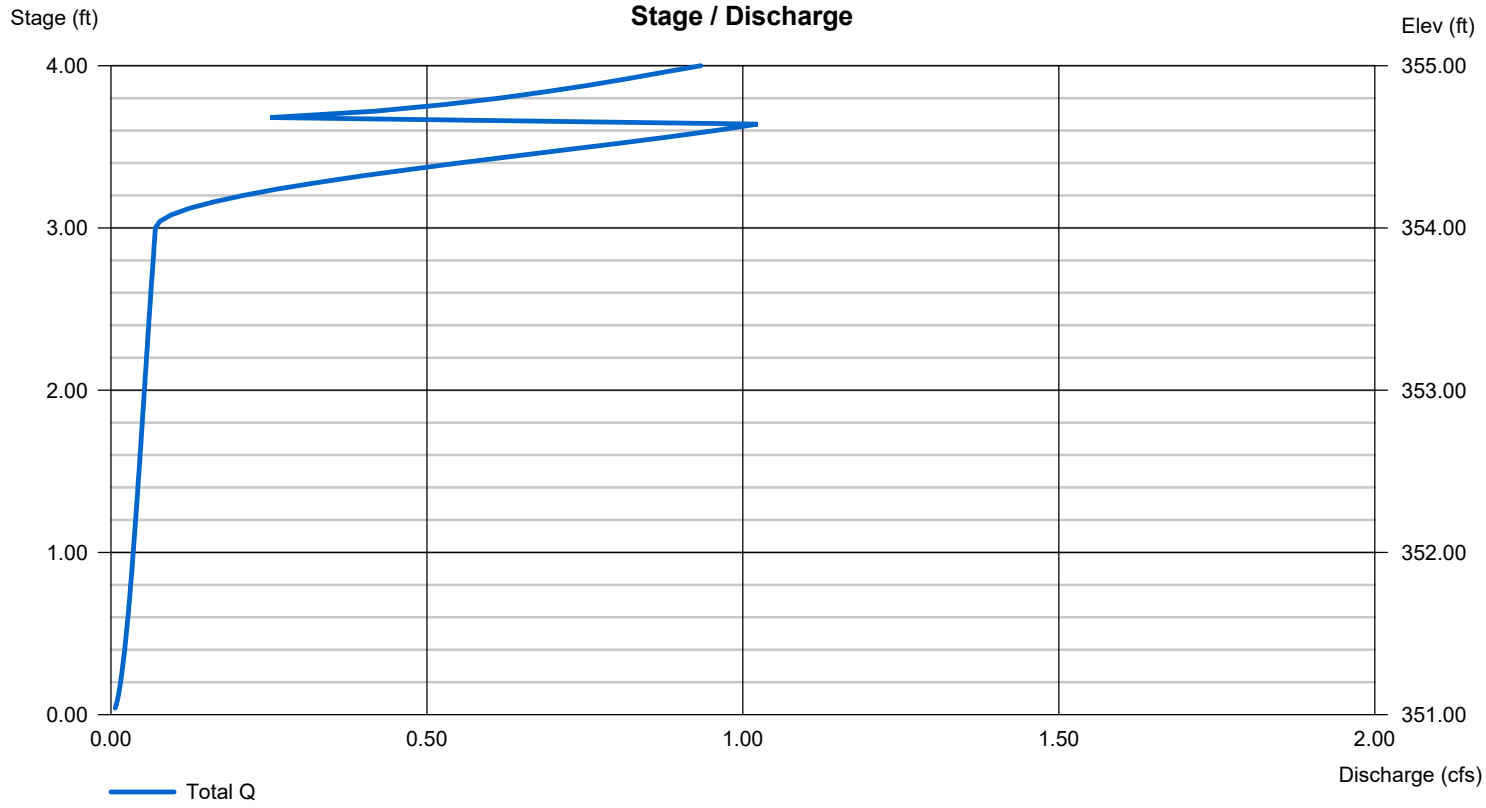
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.600 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 1 - LOT 2 INFILTRATION POND

Pond Data

UG Chambers -Invert elev. = 353.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 65.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	353.00	n/a	0	0
0.40	353.40	n/a	148	148
0.80	353.80	n/a	258	406
1.20	354.20	n/a	314	720
1.60	354.60	n/a	346	1,066
2.00	355.00	n/a	361	1,427
2.40	355.40	n/a	361	1,788
2.80	355.80	n/a	345	2,133
3.20	356.20	n/a	314	2,447
3.60	356.60	n/a	258	2,705
4.00	357.00	n/a	148	2,853

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 355.75	0.00	0.00	0.00
Length (ft)	= 47.20	0.00	0.00	0.00
Slope (%)	= 1.20	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

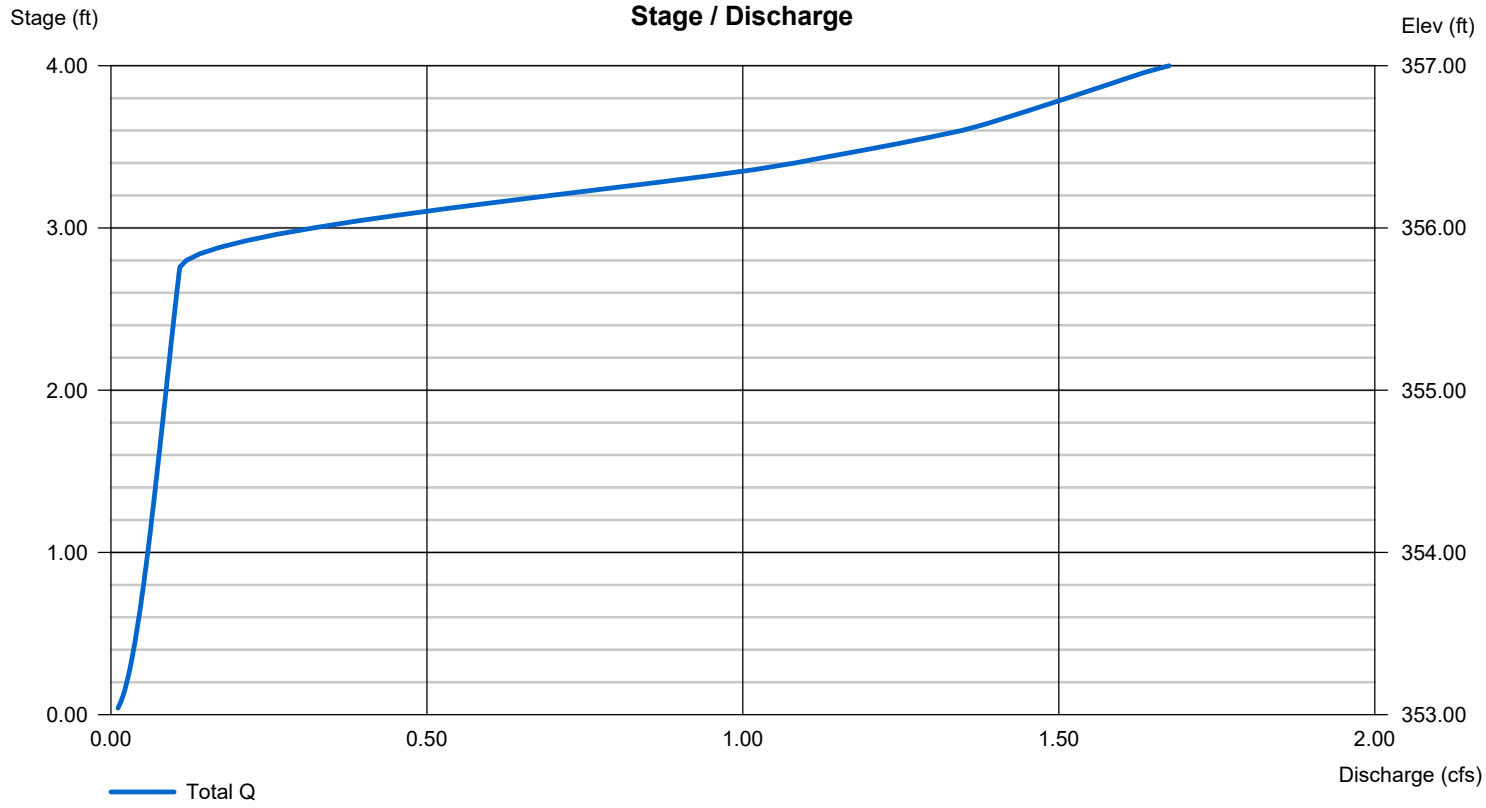
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 2.640 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond No. 2 - LOT 3 INFILTRATION POND

Pond Data

UG Chambers -Invert elev. = 357.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 50.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	357.00	n/a	0	0
0.40	357.40	n/a	160	160
0.80	357.80	n/a	277	437
1.20	358.20	n/a	337	774
1.60	358.60	n/a	371	1,146
2.00	359.00	n/a	388	1,534
2.40	359.40	n/a	388	1,922
2.80	359.80	n/a	371	2,293
3.20	360.20	n/a	337	2,630
3.60	360.60	n/a	277	2,907
4.00	361.00	n/a	159	3,067

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 359.50	0.00	0.00	0.00
Length (ft)	= 36.20	0.00	0.00	0.00
Slope (%)	= 0.60	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

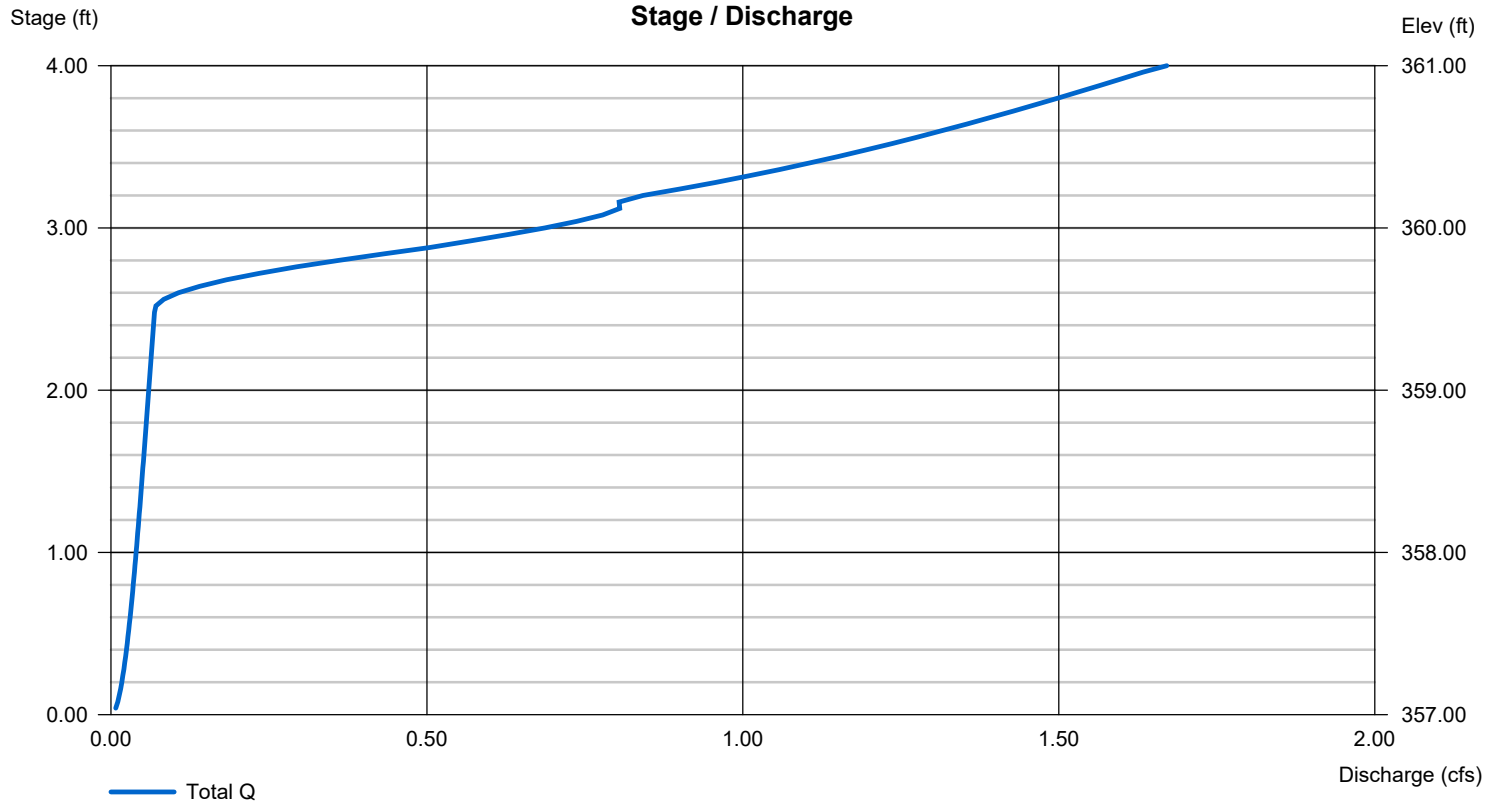
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.680 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 1 - LOT 6 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 377.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 30.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	377.00	n/a	0	0
0.40	377.40	n/a	52	52
0.80	377.80	n/a	91	143
1.20	378.20	n/a	111	254
1.60	378.60	n/a	122	376
2.00	379.00	n/a	127	503
2.40	379.40	n/a	127	630
2.80	379.80	n/a	122	752
3.20	380.20	n/a	111	862
3.60	380.60	n/a	91	953
4.00	381.00	n/a	52	1,005

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 380.00	0.00	0.00	0.00
Length (ft)	= 67.00	0.00	0.00	0.00
Slope (%)	= 10.80	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

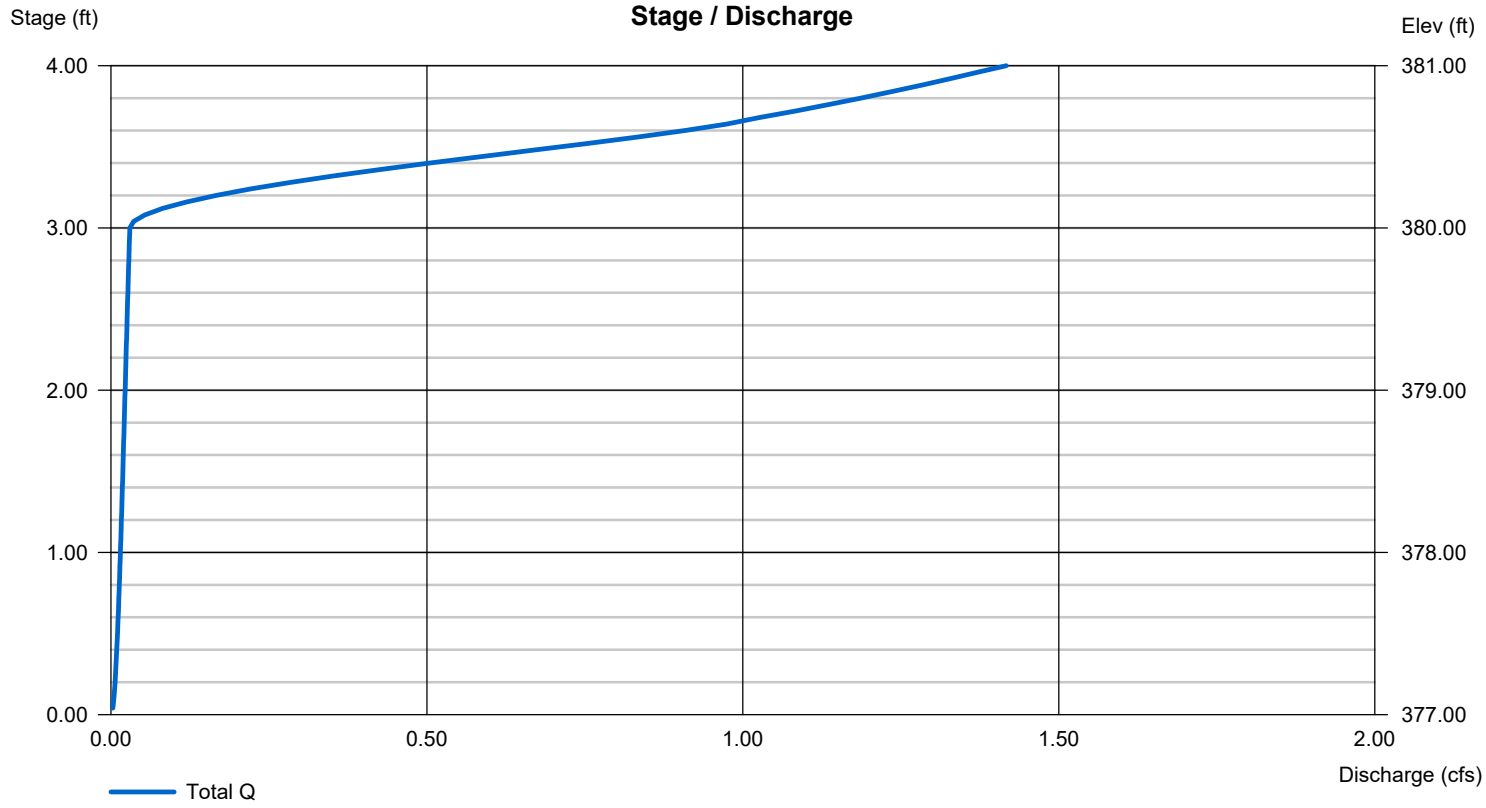
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.920 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 2 - LOT 7 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 379.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 40.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	379.00	n/a	0	0
0.40	379.40	n/a	99	99
0.80	379.80	n/a	173	272
1.20	380.20	n/a	210	482
1.60	380.60	n/a	231	714
2.00	381.00	n/a	242	955
2.40	381.40	n/a	242	1,197
2.80	381.80	n/a	231	1,429
3.20	382.20	n/a	210	1,638
3.60	382.60	n/a	173	1,811
4.00	383.00	n/a	99	1,910

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 381.50	0.00	0.00	0.00
Length (ft)	= 138.00	0.00	0.00	0.00
Slope (%)	= 2.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

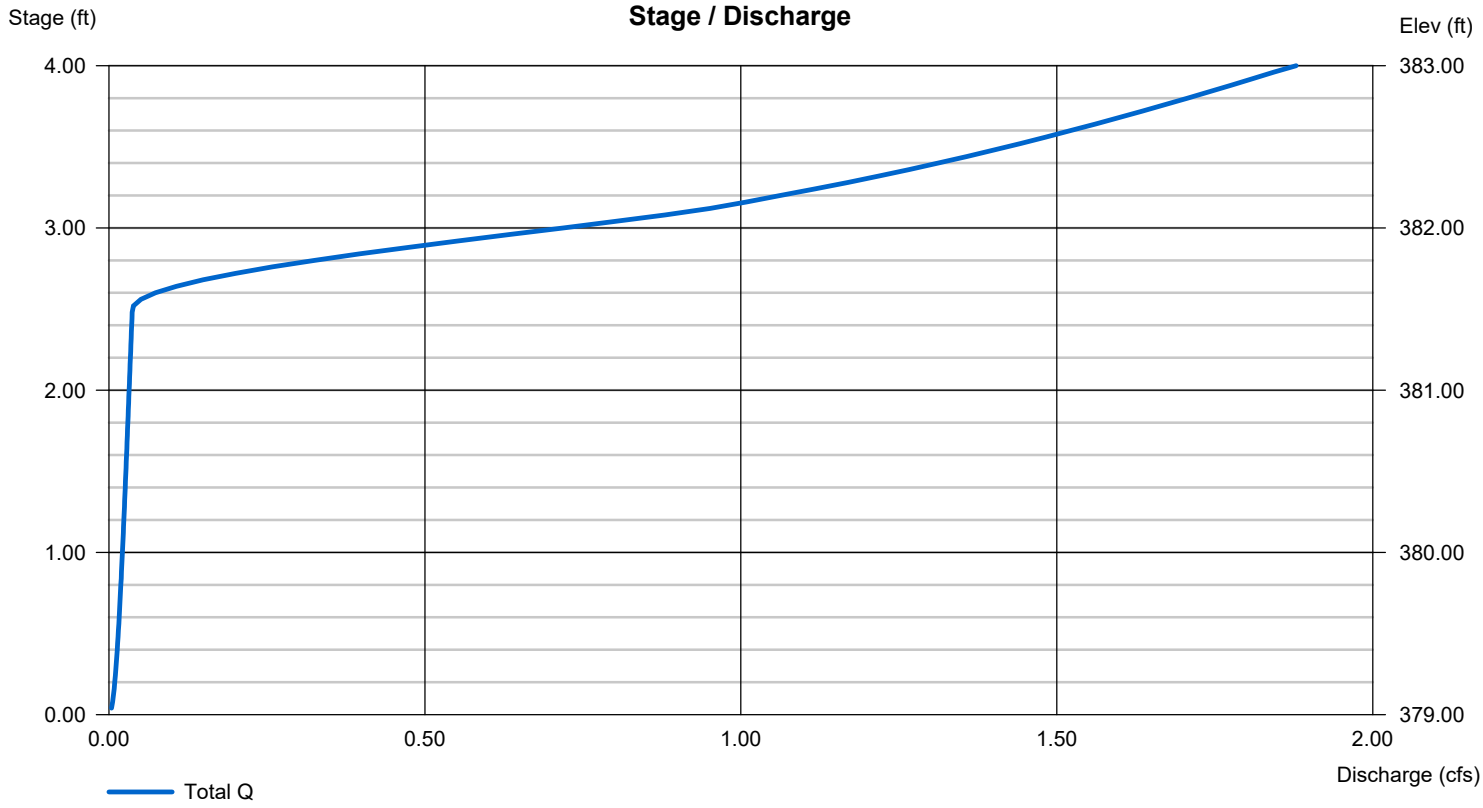
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.440 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 3 - LOT 8 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 376.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 70.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	376.00	n/a	0	0
0.40	376.40	n/a	212	212
0.80	376.80	n/a	368	580
1.20	377.20	n/a	448	1,028
1.60	377.60	n/a	493	1,521
2.00	378.00	n/a	515	2,037
2.40	378.40	n/a	515	2,552
2.80	378.80	n/a	493	3,045
3.20	379.20	n/a	448	3,493
3.60	379.60	n/a	368	3,861
4.00	380.00	n/a	212	4,072

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 379.00	0.00	0.00	0.00
Length (ft)	= 5.00	0.00	0.00	0.00
Slope (%)	= 5.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

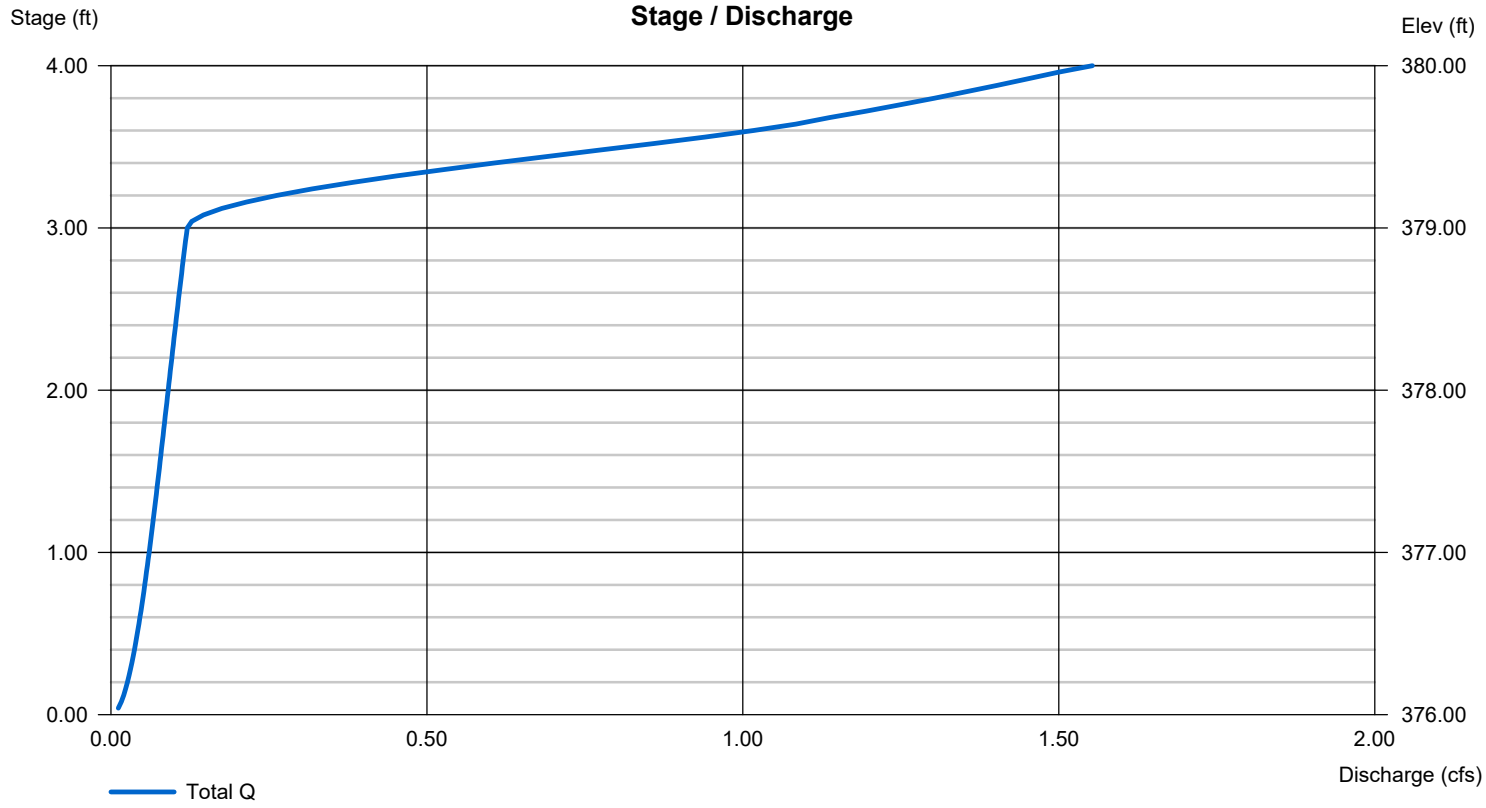
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.920 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 4 - LOT 9 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 370.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	370.00	n/a	0	0
0.40	370.40	n/a	139	139
0.80	370.80	n/a	241	380
1.20	371.20	n/a	293	673
1.60	371.60	n/a	323	995
2.00	372.00	n/a	337	1,333
2.40	372.40	n/a	337	1,670
2.80	372.80	n/a	323	1,992
3.20	373.20	n/a	293	2,285
3.60	373.60	n/a	241	2,526
4.00	374.00	n/a	138	2,665

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 371.50	0.00	0.00	0.00
Length (ft)	= 48.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

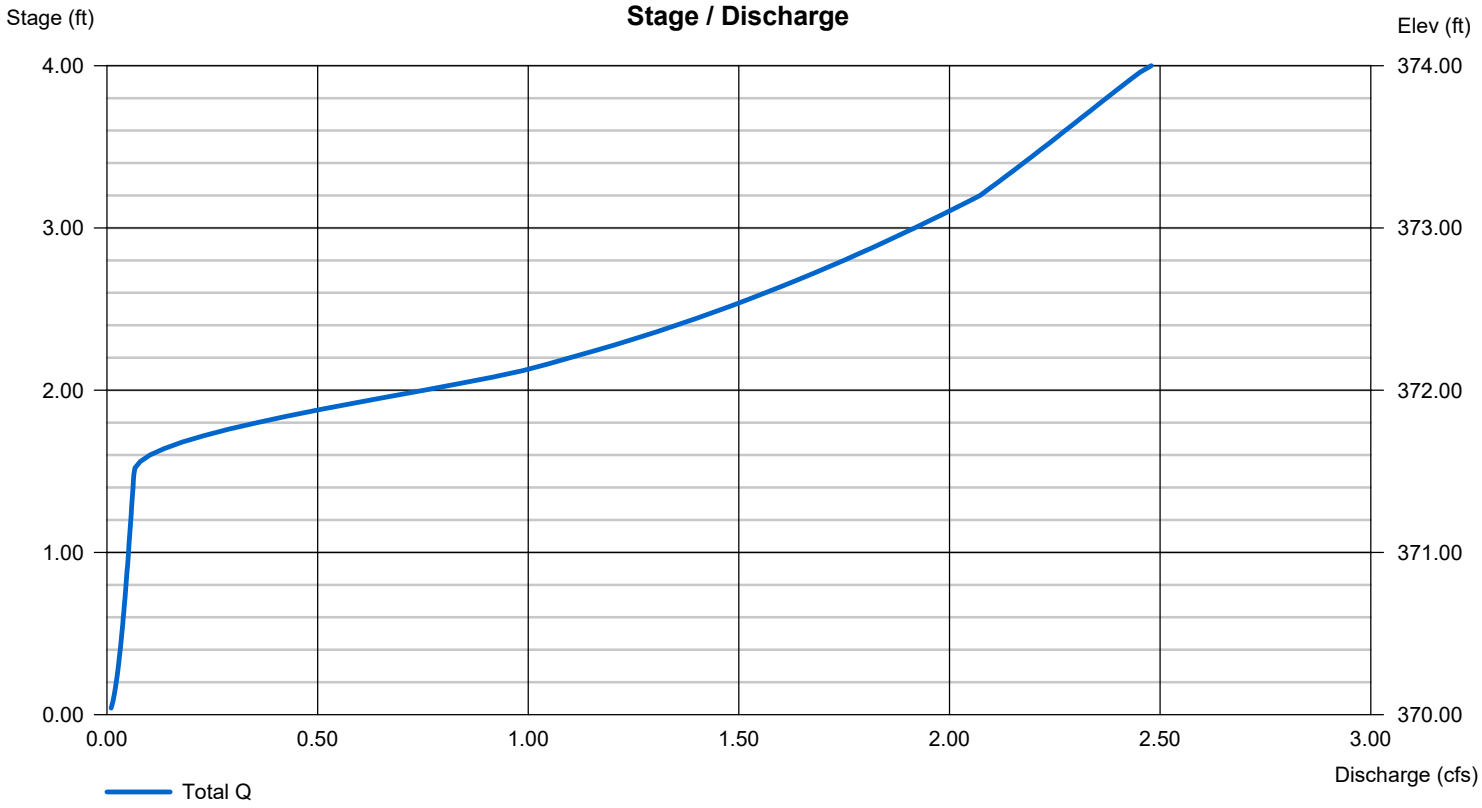
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 2.480 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 5 - LOT 10 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 367.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 70.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	367.00	n/a	0	0
0.40	367.40	n/a	158	158
0.80	367.80	n/a	275	433
1.20	368.20	n/a	334	768
1.60	368.60	n/a	368	1,136
2.00	369.00	n/a	385	1,521
2.40	369.40	n/a	385	1,906
2.80	369.80	n/a	368	2,274
3.20	370.20	n/a	334	2,609
3.60	370.60	n/a	275	2,884
4.00	371.00	n/a	158	3,042

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 370.00	0.00	0.00	0.00
Length (ft)	= 26.70	0.00	0.00	0.00
Slope (%)	= 4.10	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

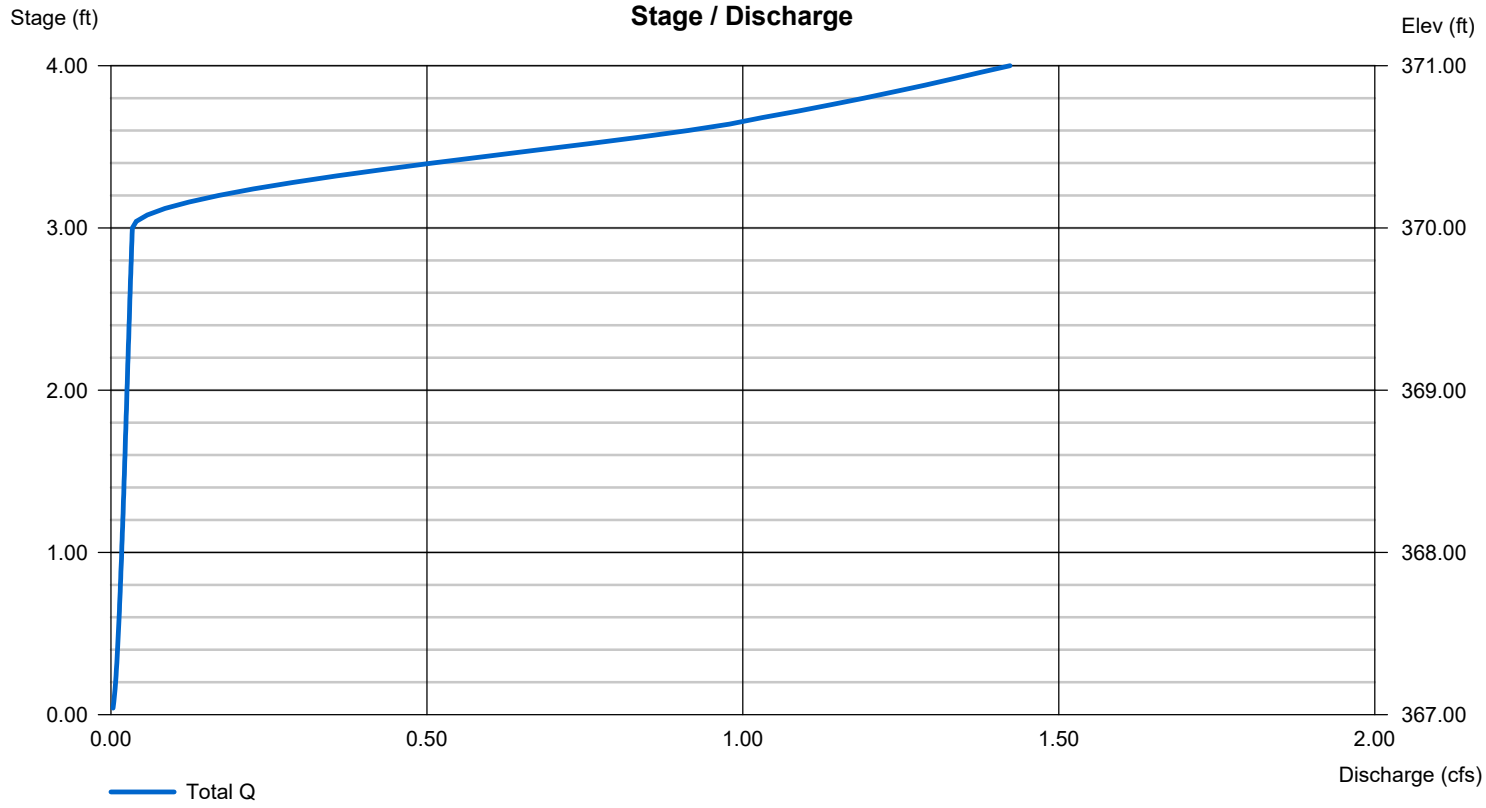
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.720 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 01 / 17 / 2021

Pond No. 1 - LOT 11 INFIL BED

Pond Data

UG Chambers -Invert elev. = 362.50 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	362.50	n/a	0	0
0.40	362.90	n/a	186	186
0.80	363.30	n/a	323	509
1.20	363.70	n/a	393	901
1.60	364.10	n/a	432	1,333
2.00	364.50	n/a	452	1,785
2.40	364.90	n/a	452	2,237
2.80	365.30	n/a	432	2,669
3.20	365.70	n/a	392	3,061
3.60	366.10	n/a	323	3,384
4.00	366.50	n/a	186	3,569

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 363.25	0.00	0.00	0.00
Length (ft)	= 71.00	0.00	0.00	0.00
Slope (%)	= 4.60	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

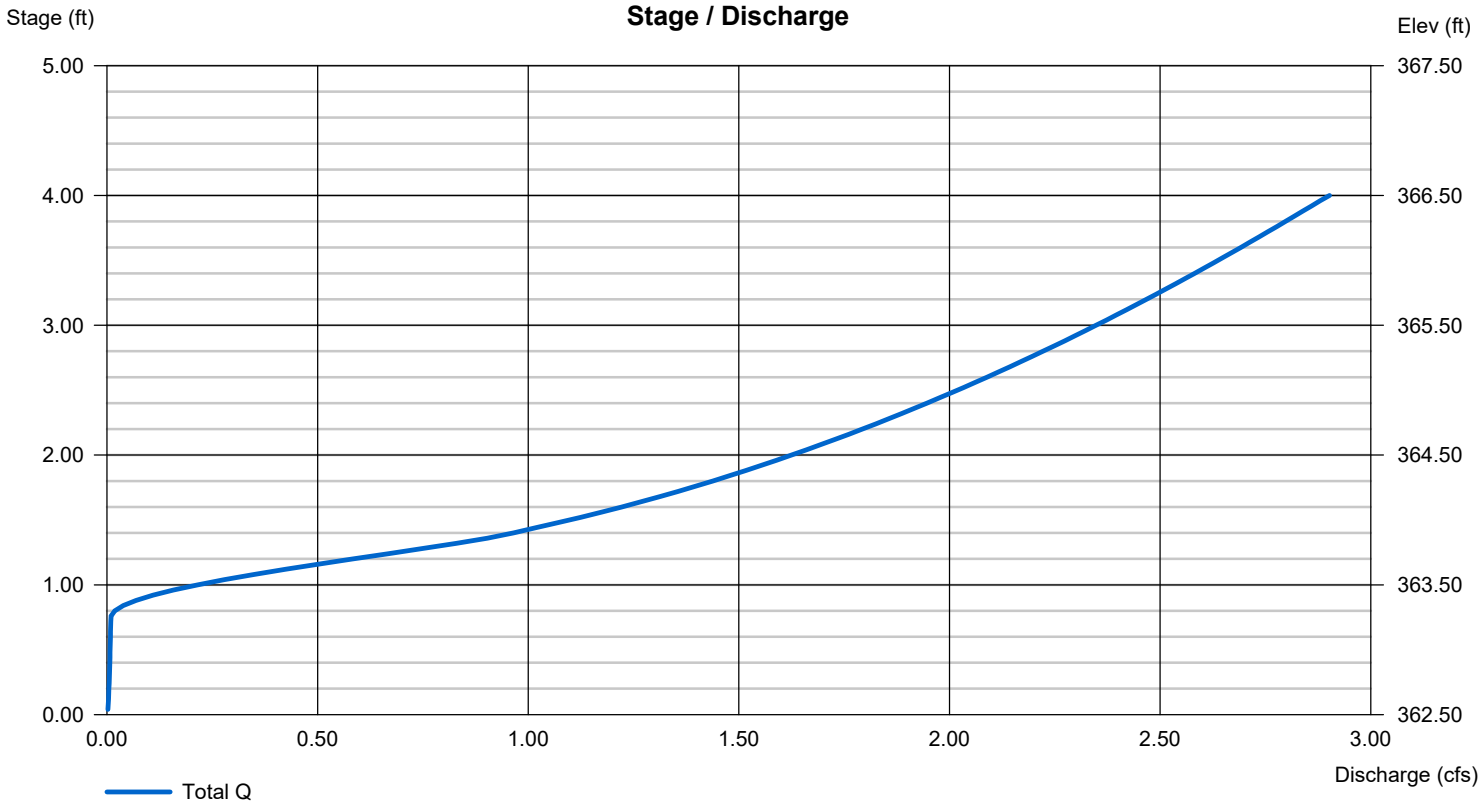
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.390 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 6 - LOT 12 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 378.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 70.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	378.00	n/a	0	0
0.40	378.40	n/a	212	212
0.80	378.80	n/a	368	580
1.20	379.20	n/a	448	1,028
1.60	379.60	n/a	493	1,521
2.00	380.00	n/a	515	2,037
2.40	380.40	n/a	515	2,552
2.80	380.80	n/a	493	3,045
3.20	381.20	n/a	448	3,493
3.60	381.60	n/a	368	3,861
4.00	382.00	n/a	212	4,072

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 381.00	0.00	0.00	0.00
Length (ft)	= 52.40	0.00	0.00	0.00
Slope (%)	= 1.70	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

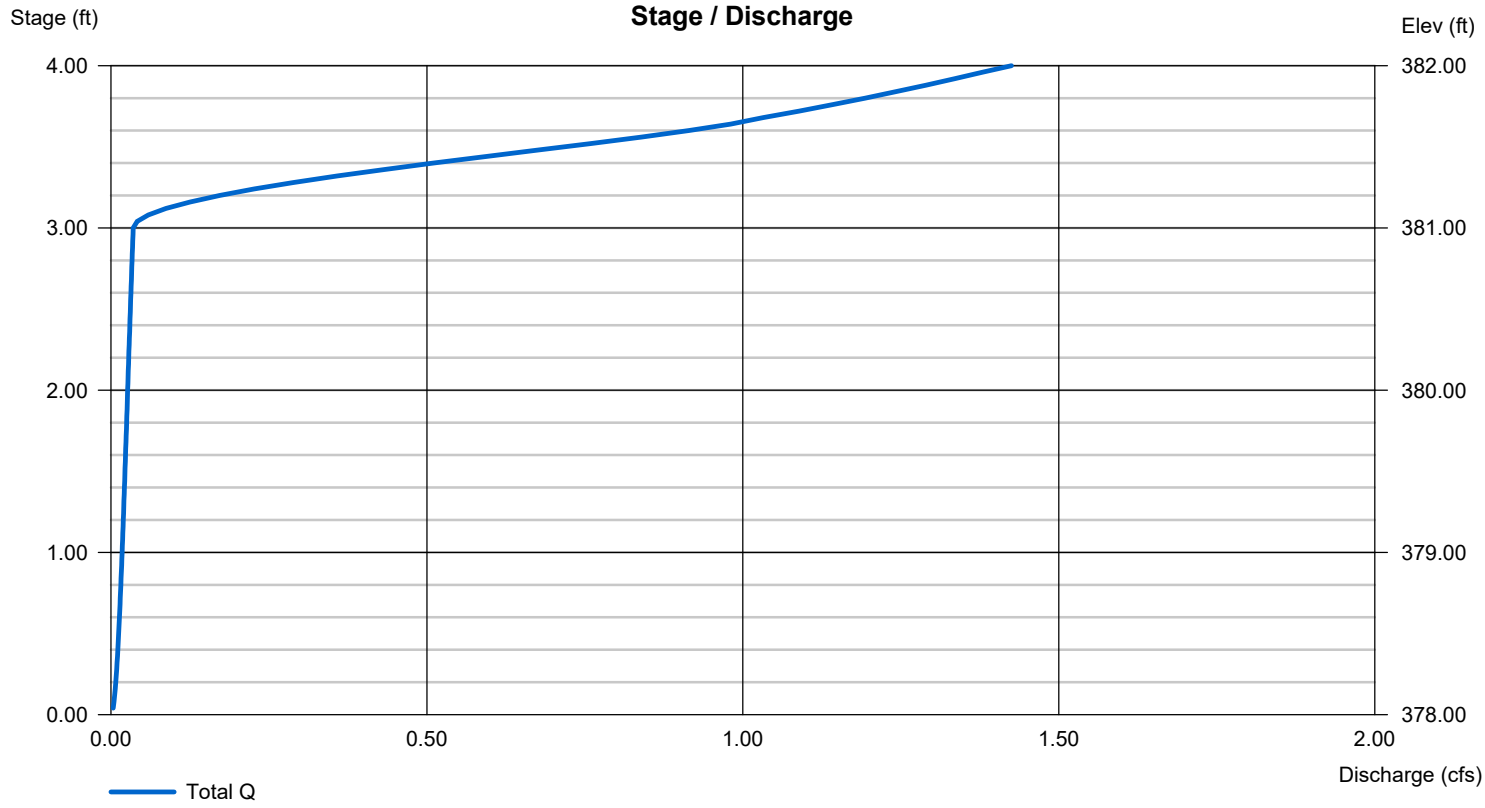
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.560 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Pond No. 5 - LOT 13 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 382.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	382.00	n/a	0	0
0.40	382.40	n/a	186	186
0.80	382.80	n/a	323	509
1.20	383.20	n/a	393	901
1.60	383.60	n/a	432	1,333
2.00	384.00	n/a	452	1,785
2.40	384.40	n/a	452	2,237
2.80	384.80	n/a	432	2,669
3.20	385.20	n/a	392	3,061
3.60	385.60	n/a	323	3,384
4.00	386.00	n/a	186	3,569

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 384.50	0.00	0.00	0.00
Length (ft)	= 58.50	0.00	0.00	0.00
Slope (%)	= 5.40	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

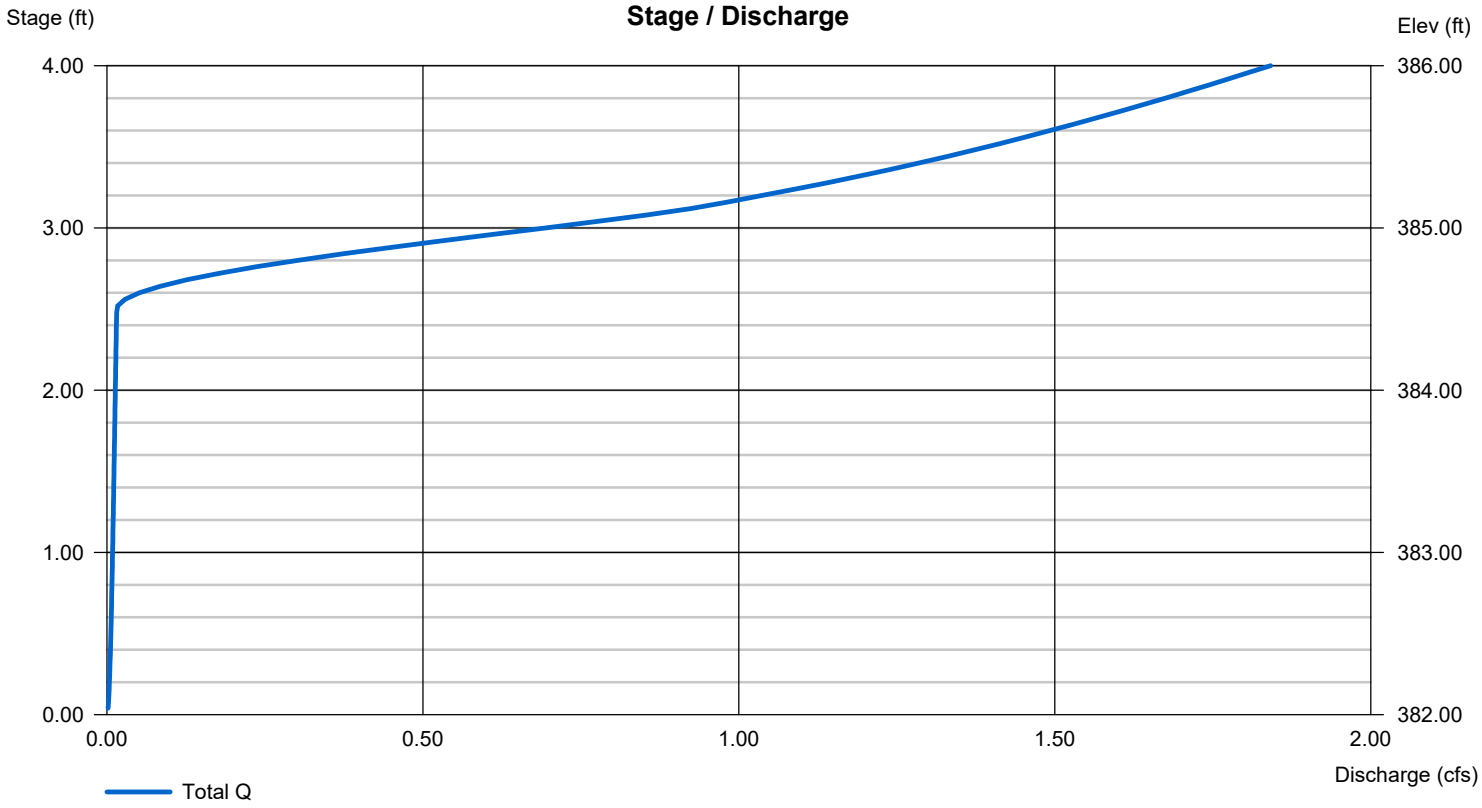
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.320 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 2 - LOT 14 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 386.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 75.00 ft, No. Barrels = 6, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	386.00	n/a	0	0
0.40	386.40	n/a	339	339
0.80	386.80	n/a	589	928
1.20	387.20	n/a	716	1,643
1.60	387.60	n/a	789	2,432
2.00	388.00	n/a	824	3,256
2.40	388.40	n/a	824	4,080
2.80	388.80	n/a	788	4,868
3.20	389.20	n/a	716	5,584
3.60	389.60	n/a	588	6,172
4.00	390.00	n/a	338	6,511

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 387.00	0.00	0.00	0.00
Length (ft)	= 27.70	0.00	0.00	0.00
Slope (%)	= 7.60	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

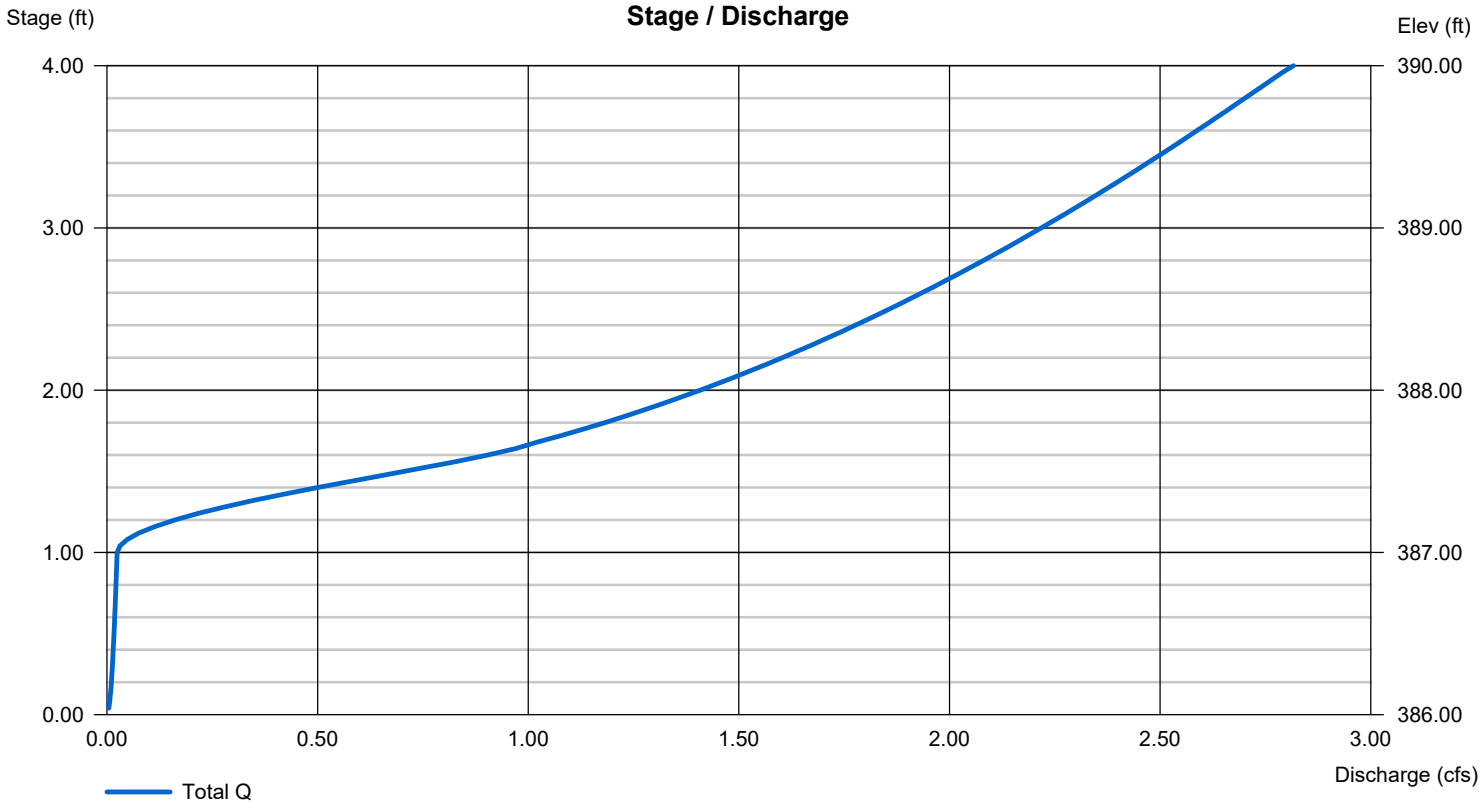
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.480 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 1 - LOT 16 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 400.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 90.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	400.00	n/a	0	0
0.40	400.40	n/a	264	264
0.80	400.80	n/a	459	723
1.20	401.20	n/a	558	1,282
1.60	401.60	n/a	615	1,897
2.00	402.00	n/a	643	2,539
2.40	402.40	n/a	643	3,182
2.80	402.80	n/a	615	3,797
3.20	403.20	n/a	558	4,355
3.60	403.60	n/a	459	4,814
4.00	404.00	n/a	264	5,078

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 402.25	0.00	0.00	0.00
Length (ft)	= 29.80	0.00	0.00	0.00
Slope (%)	= 0.80	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

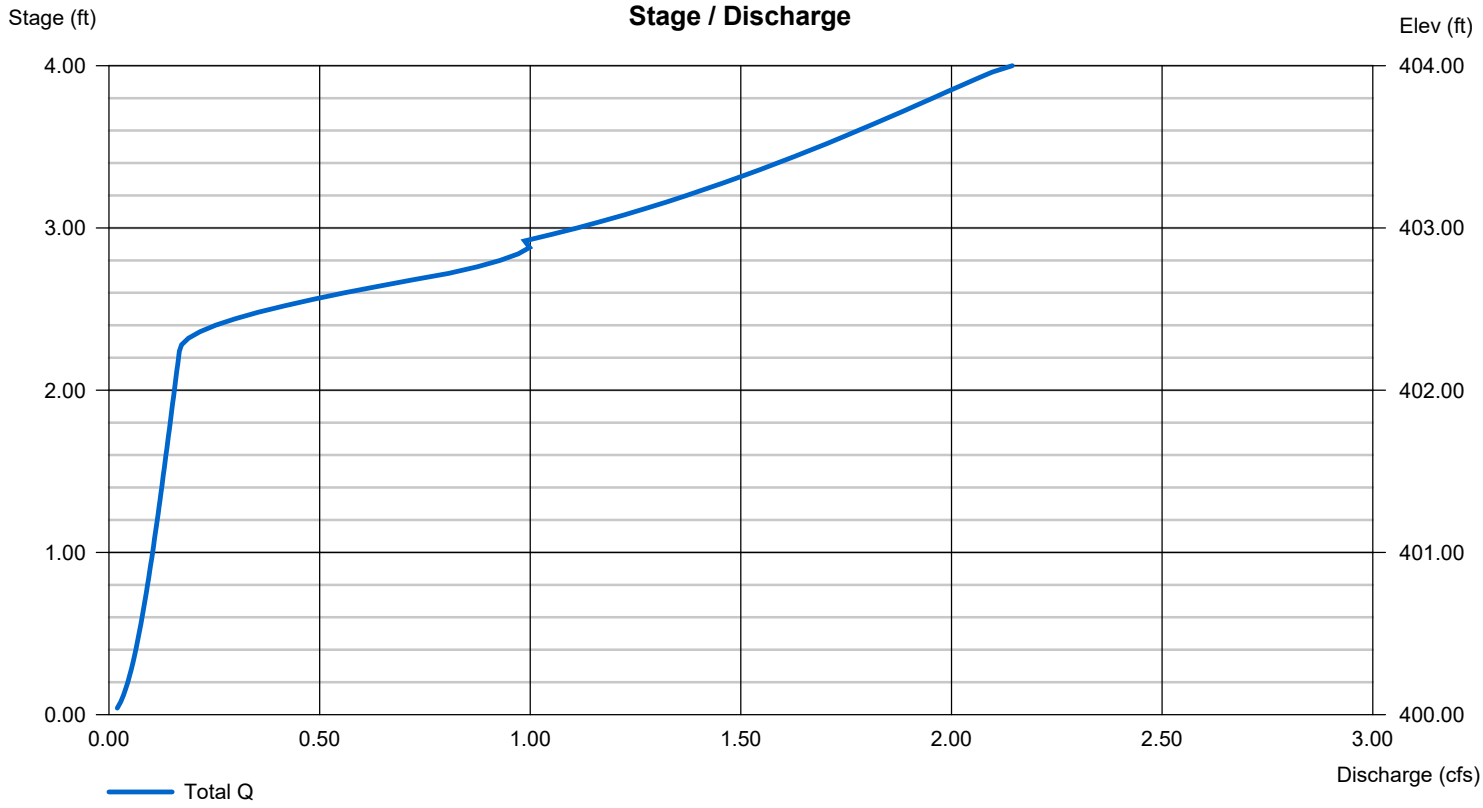
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 2.640 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 3 - LOT 17 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 404.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 50.00 ft, No. Barrels = 6, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	404.00	n/a	0	0
0.40	404.40	n/a	241	241
0.80	404.80	n/a	418	659
1.20	405.20	n/a	509	1,168
1.60	405.60	n/a	560	1,728
2.00	406.00	n/a	585	2,313
2.40	406.40	n/a	585	2,898
2.80	406.80	n/a	560	3,459
3.20	407.20	n/a	508	3,967
3.60	407.60	n/a	418	4,385
4.00	408.00	n/a	240	4,625

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 406.50	0.00	0.00	0.00
Length (ft)	= 135.70	0.00	0.00	0.00
Slope (%)	= 4.60	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

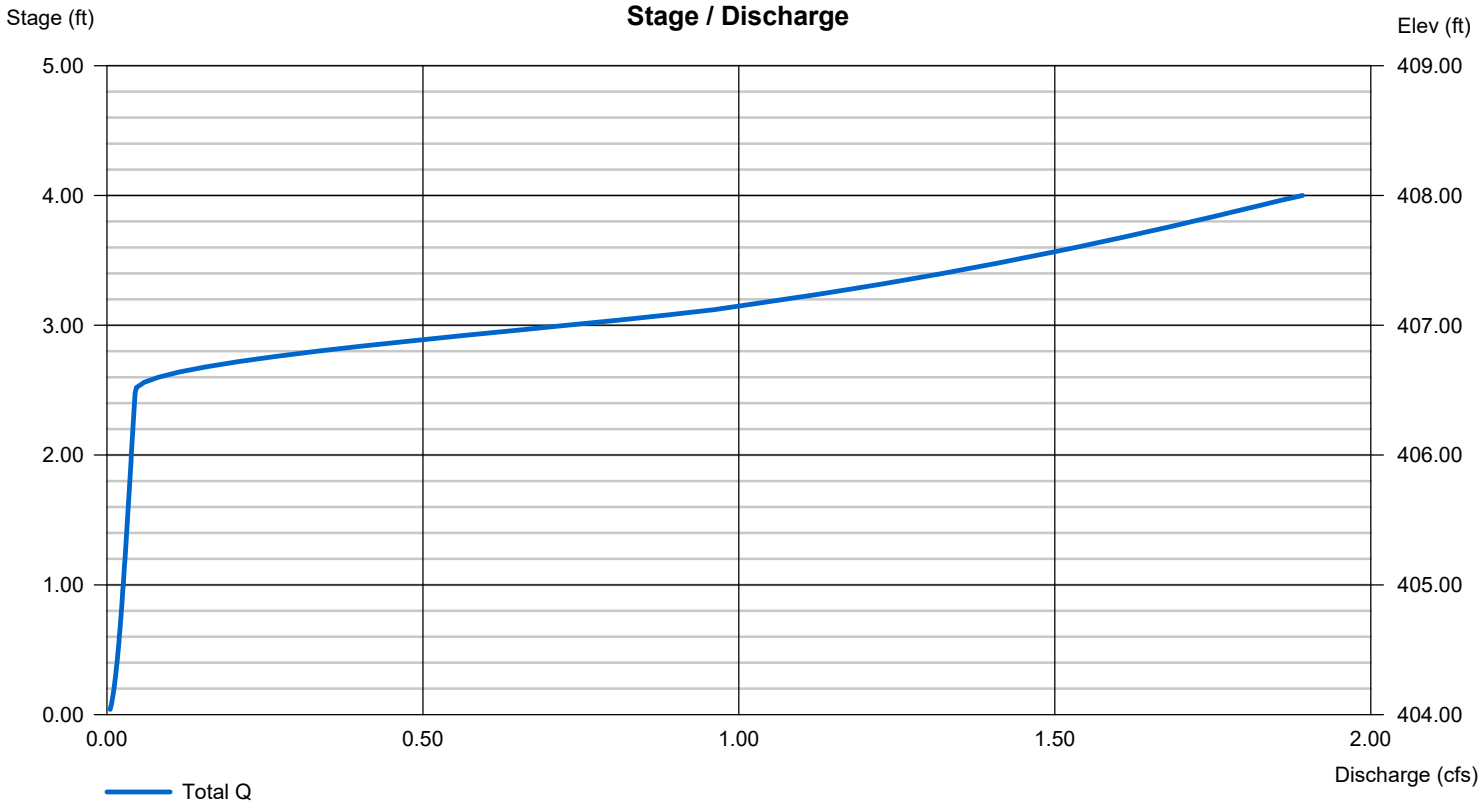
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.720 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 4 - LOT 18 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 400.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	400.00	n/a	0	0
0.40	400.40	n/a	139	139
0.80	400.80	n/a	241	380
1.20	401.20	n/a	293	673
1.60	401.60	n/a	323	995
2.00	402.00	n/a	337	1,333
2.40	402.40	n/a	337	1,670
2.80	402.80	n/a	323	1,992
3.20	403.20	n/a	293	2,285
3.60	403.60	n/a	241	2,526
4.00	404.00	n/a	138	2,665

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 402.50	0.00	0.00	0.00
Length (ft)	= 47.00	0.00	0.00	0.00
Slope (%)	= 4.90	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

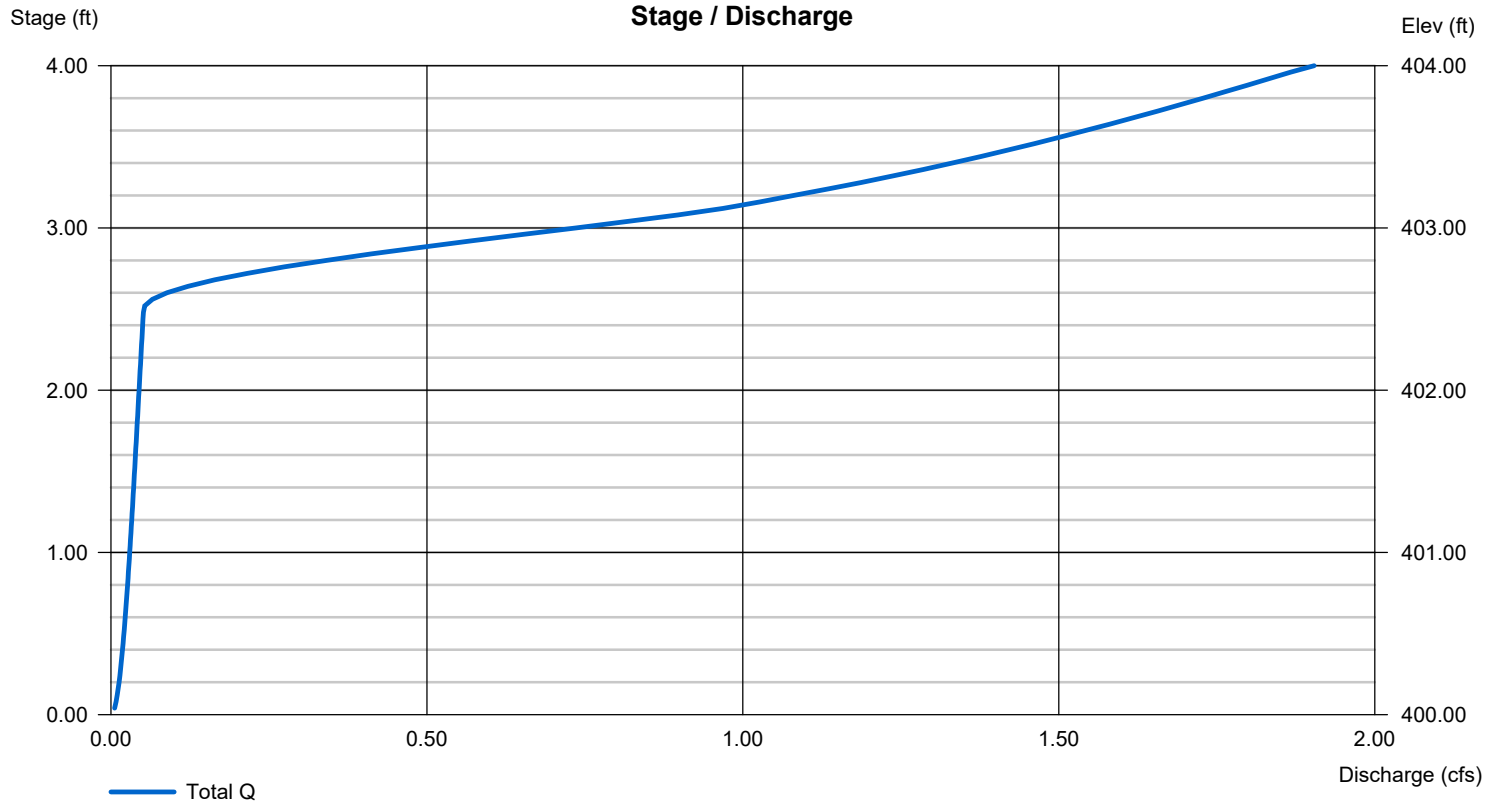
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.440 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 01 / 17 / 2021

Pond No. 1 - LOT 19 INFIL BED

Pond Data

UG Chambers -Invert elev. = 391.50 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	391.50	n/a	0	0
0.40	391.90	n/a	186	186
0.80	392.30	n/a	323	509
1.20	392.70	n/a	393	901
1.60	393.10	n/a	432	1,333
2.00	393.50	n/a	452	1,785
2.40	393.90	n/a	452	2,237
2.80	394.30	n/a	432	2,669
3.20	394.70	n/a	392	3,061
3.60	395.10	n/a	323	3,384
4.00	395.50	n/a	186	3,569

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 393.75	0.00	0.00	0.00
Length (ft)	= 276.00	0.00	0.00	0.00
Slope (%)	= 12.20	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

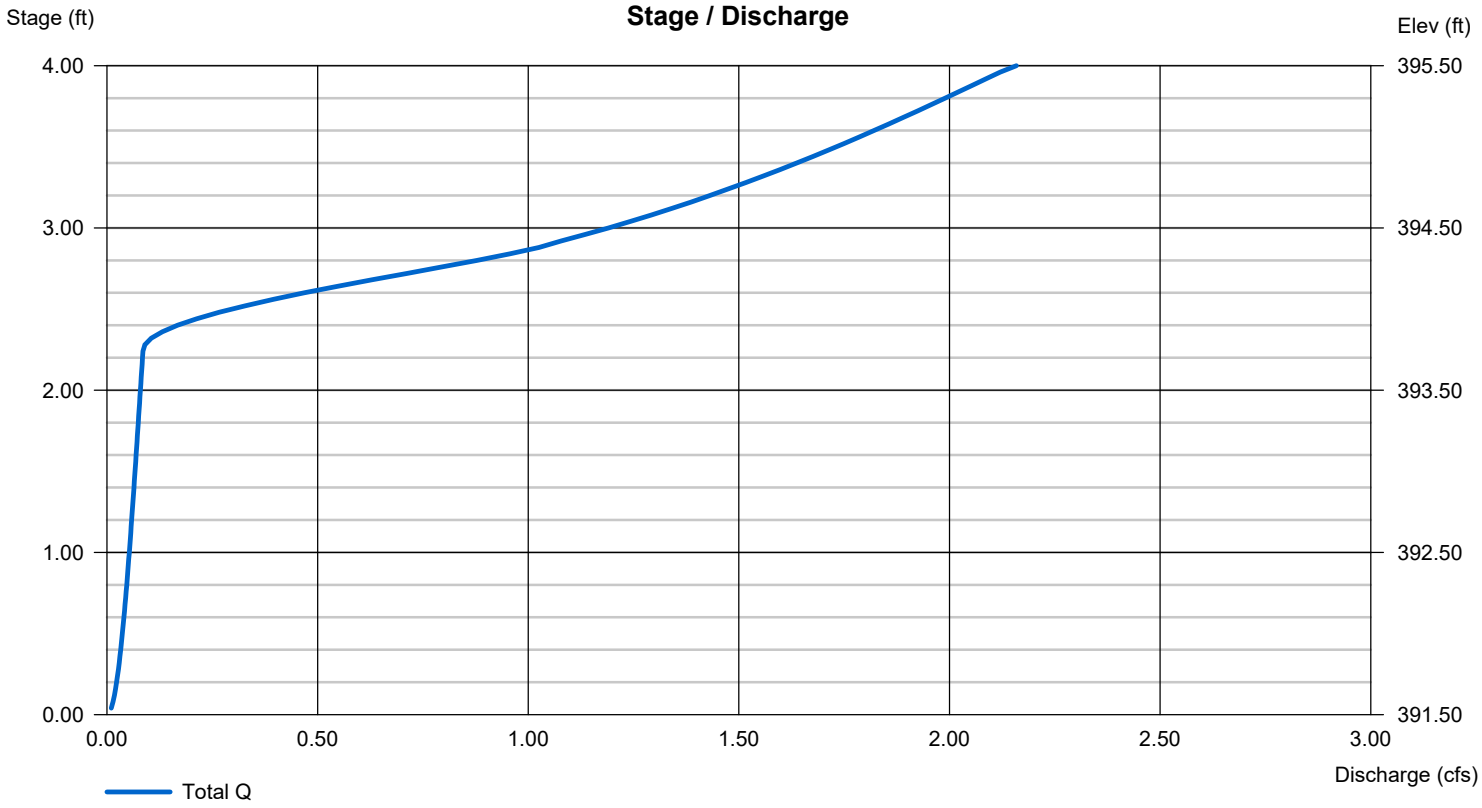
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.920 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 01 / 17 / 2021

Pond No. 1 - LOT 20 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 368.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	368.00	n/a	0	0
0.40	368.40	n/a	92	92
0.80	368.80	n/a	159	251
1.20	369.20	n/a	194	444
1.60	369.60	n/a	213	657
2.00	370.00	n/a	223	880
2.40	370.40	n/a	223	1,103
2.80	370.80	n/a	213	1,316
3.20	371.20	n/a	193	1,509
3.60	371.60	n/a	159	1,668
4.00	372.00	n/a	91	1,760

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 369.50	0.00	0.00	0.00
Length (ft)	= 45.90	0.00	0.00	0.00
Slope (%)	= 1.10	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

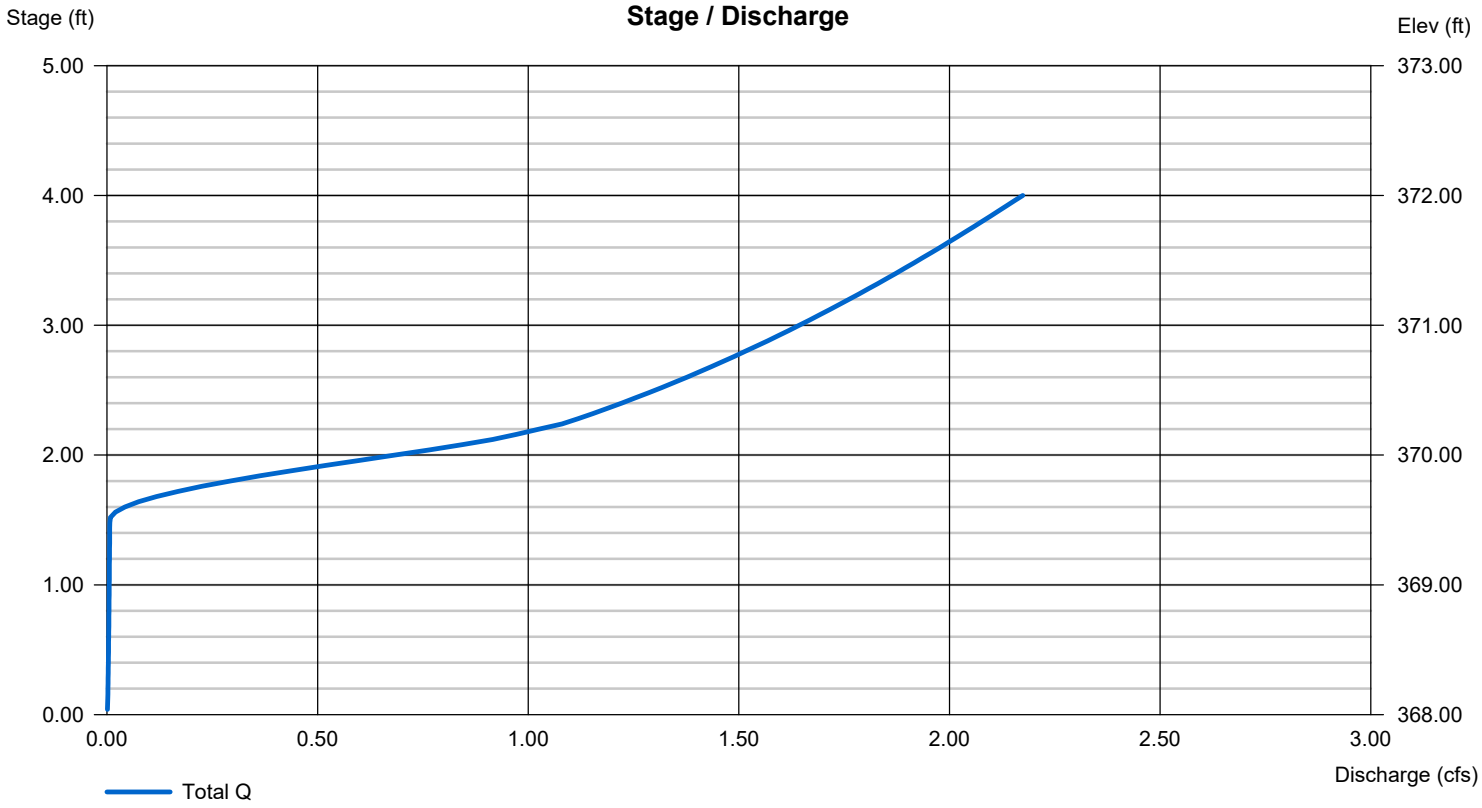
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.390 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



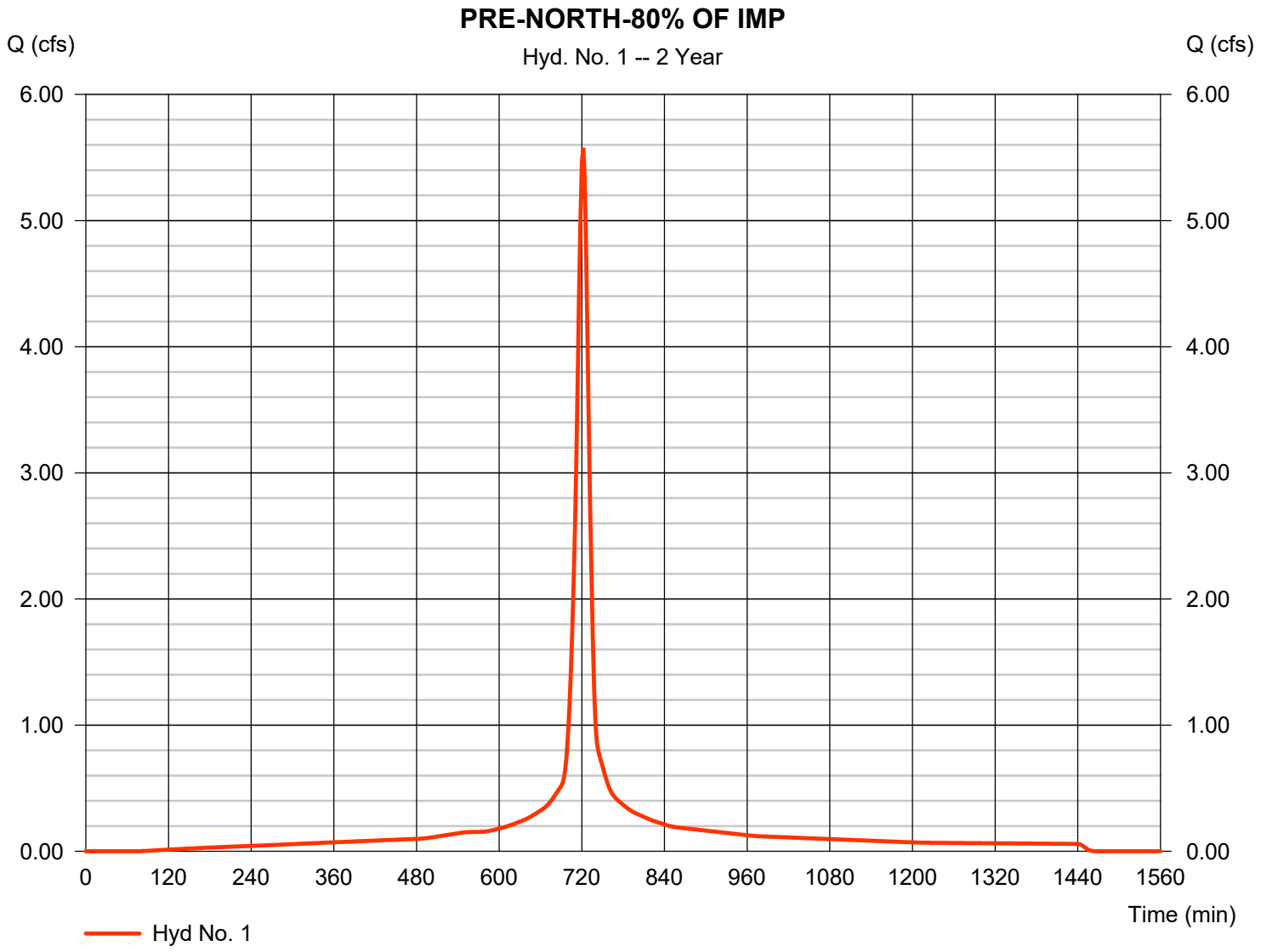
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 1

PRE-NORTH-80% OF IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 5.577 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 17,608 cuft
Drainage area	= 1.591 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



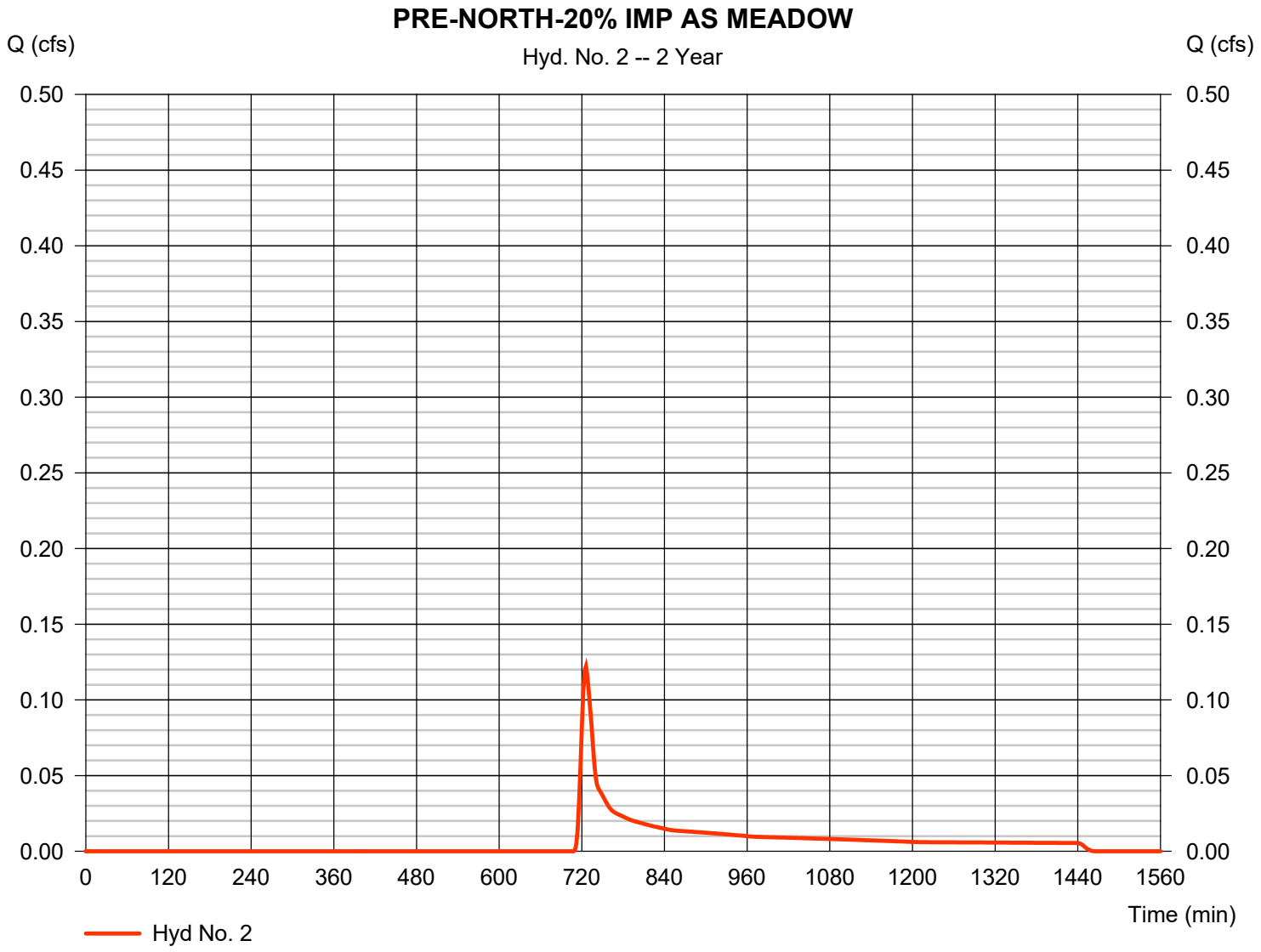
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 2

PRE-NORTH-20% IMP AS MEADOW

Hydrograph type	= SCS Runoff	Peak discharge	= 0.122 cfs
Storm frequency	= 2 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 562 cuft
Drainage area	= 0.398 ac	Curve number	= 58
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



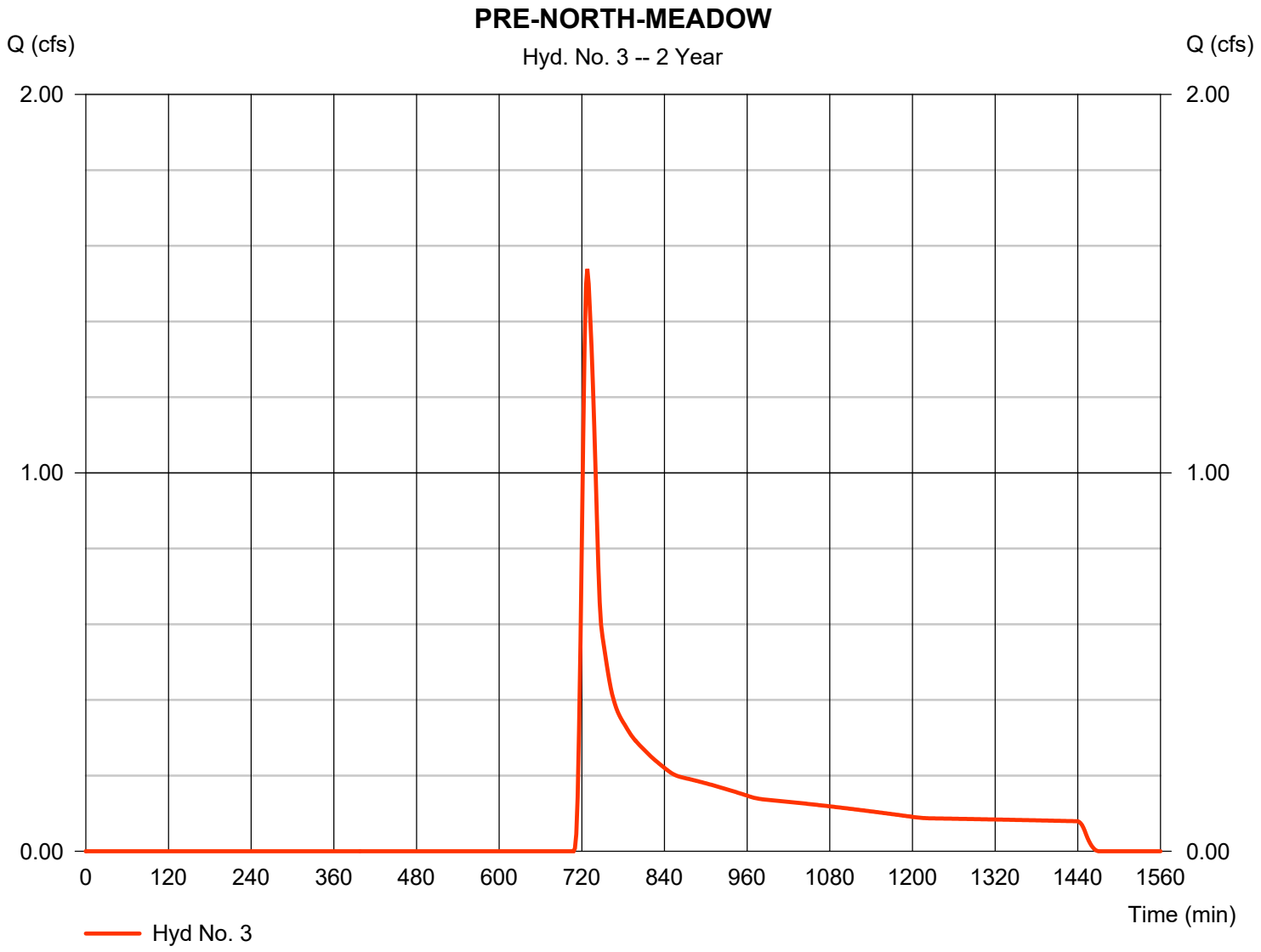
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 3

PRE-NORTH-MEADOW

Hydrograph type	= SCS Runoff	Peak discharge	= 1.538 cfs
Storm frequency	= 2 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 8,186 cuft
Drainage area	= 5.648 ac	Curve number	= 58
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



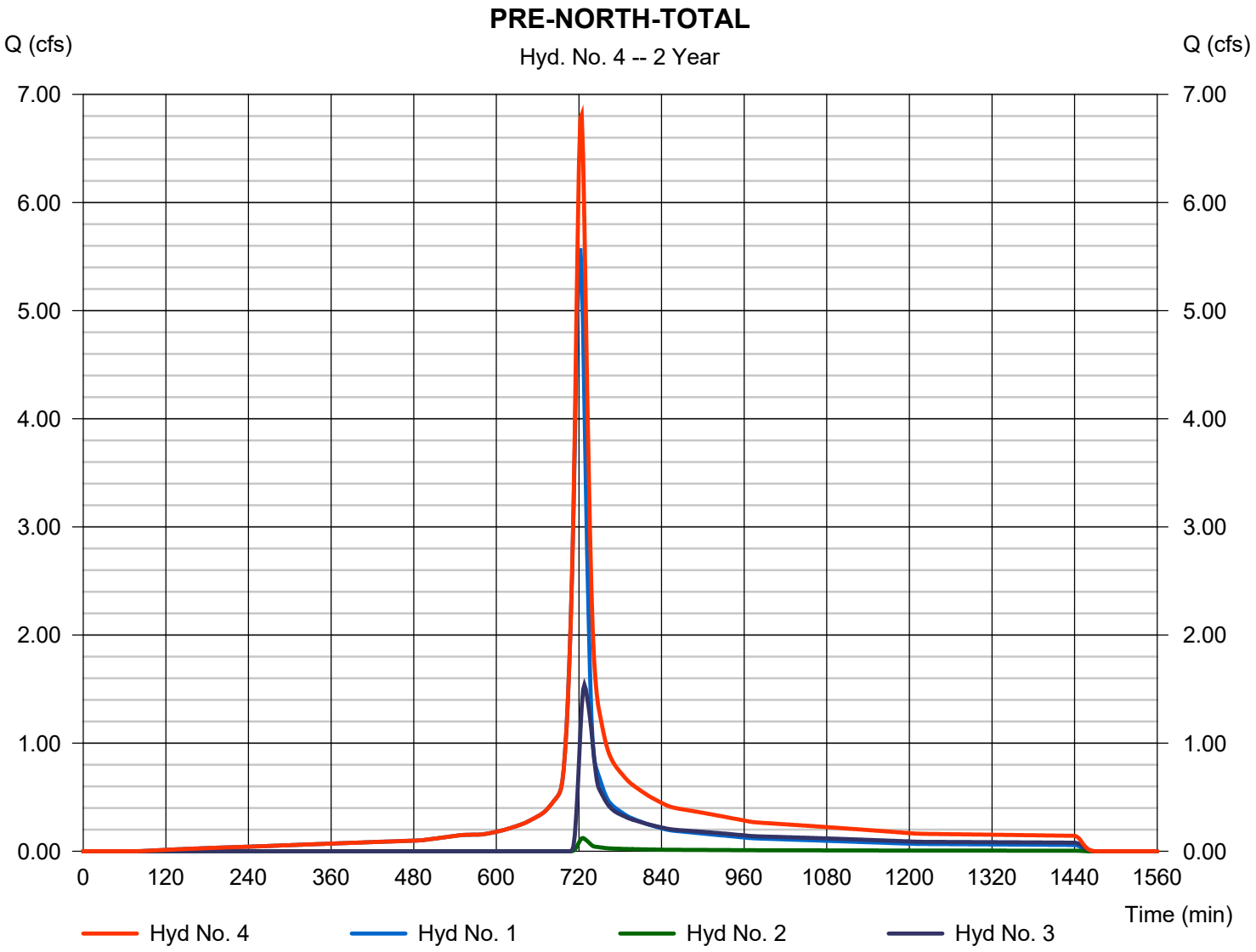
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 4

PRE-NORTH-TOTAL

Hydrograph type	= Combine	Peak discharge	= 6.812 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 26,356 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 7.637 ac



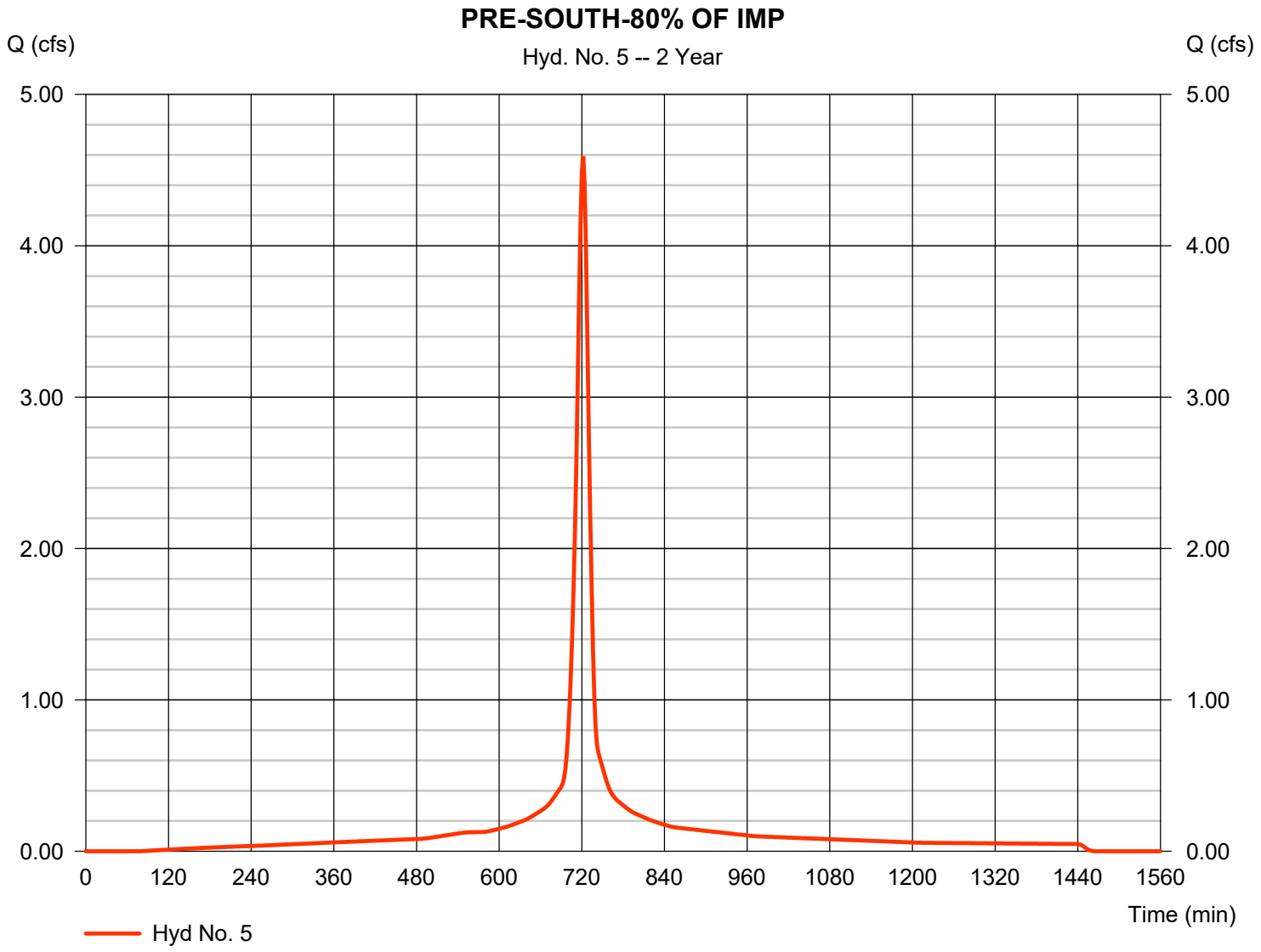
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 5

PRE-SOUTH-80% OF IMP

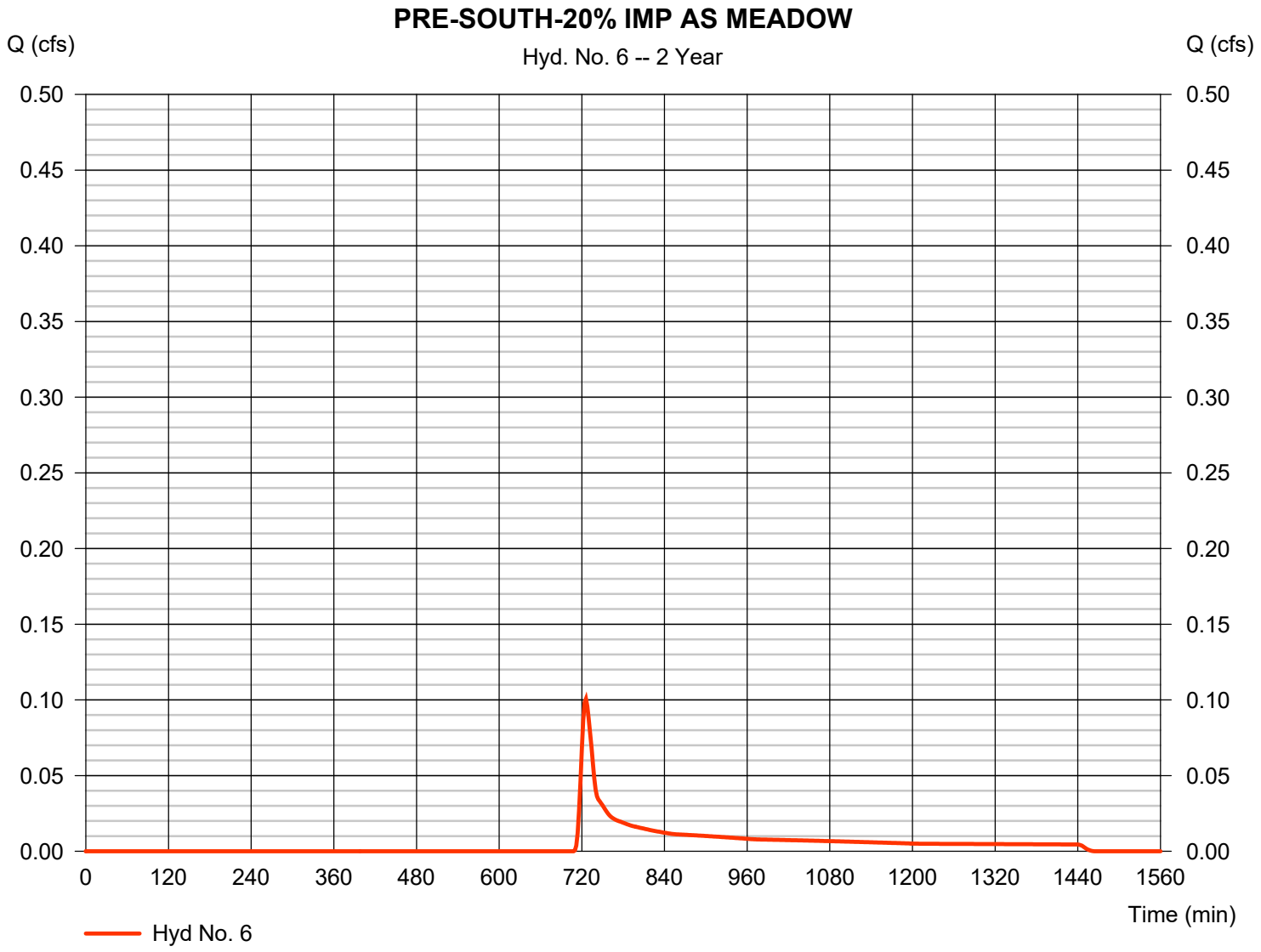
Hydrograph type	= SCS Runoff	Peak discharge	= 4.592 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 14,498 cuft
Drainage area	= 1.310 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hyd. No. 6

PRE-SOUTH-20% IMP AS MEADOW

Hydrograph type	= SCS Runoff	Peak discharge	= 0.101 cfs
Storm frequency	= 2 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 464 cuft
Drainage area	= 0.328 ac	Curve number	= 58
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



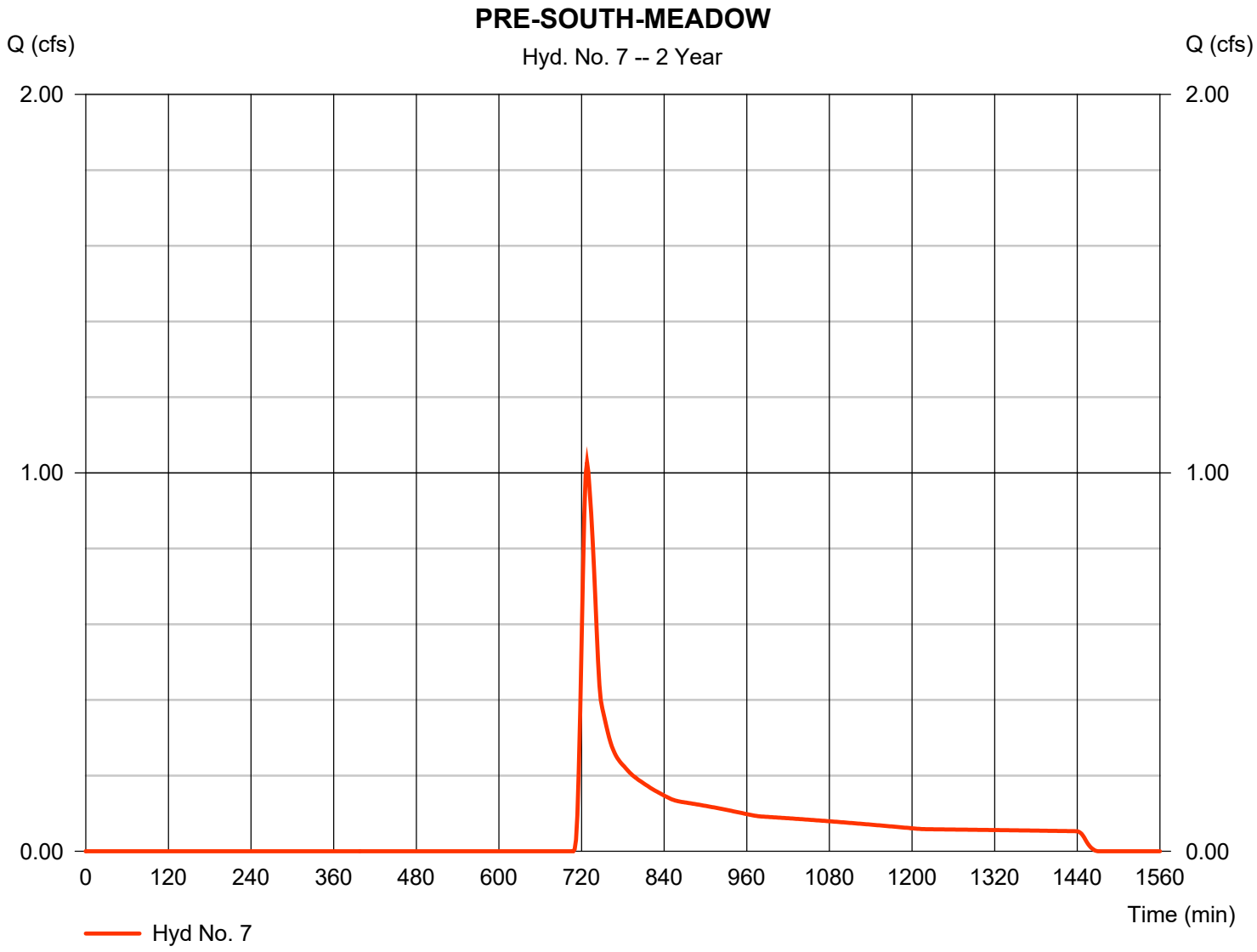
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 7

PRE-SOUTH-MEADOW

Hydrograph type	= SCS Runoff	Peak discharge	= 1.027 cfs
Storm frequency	= 2 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 5,467 cuft
Drainage area	= 3.772 ac	Curve number	= 58
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



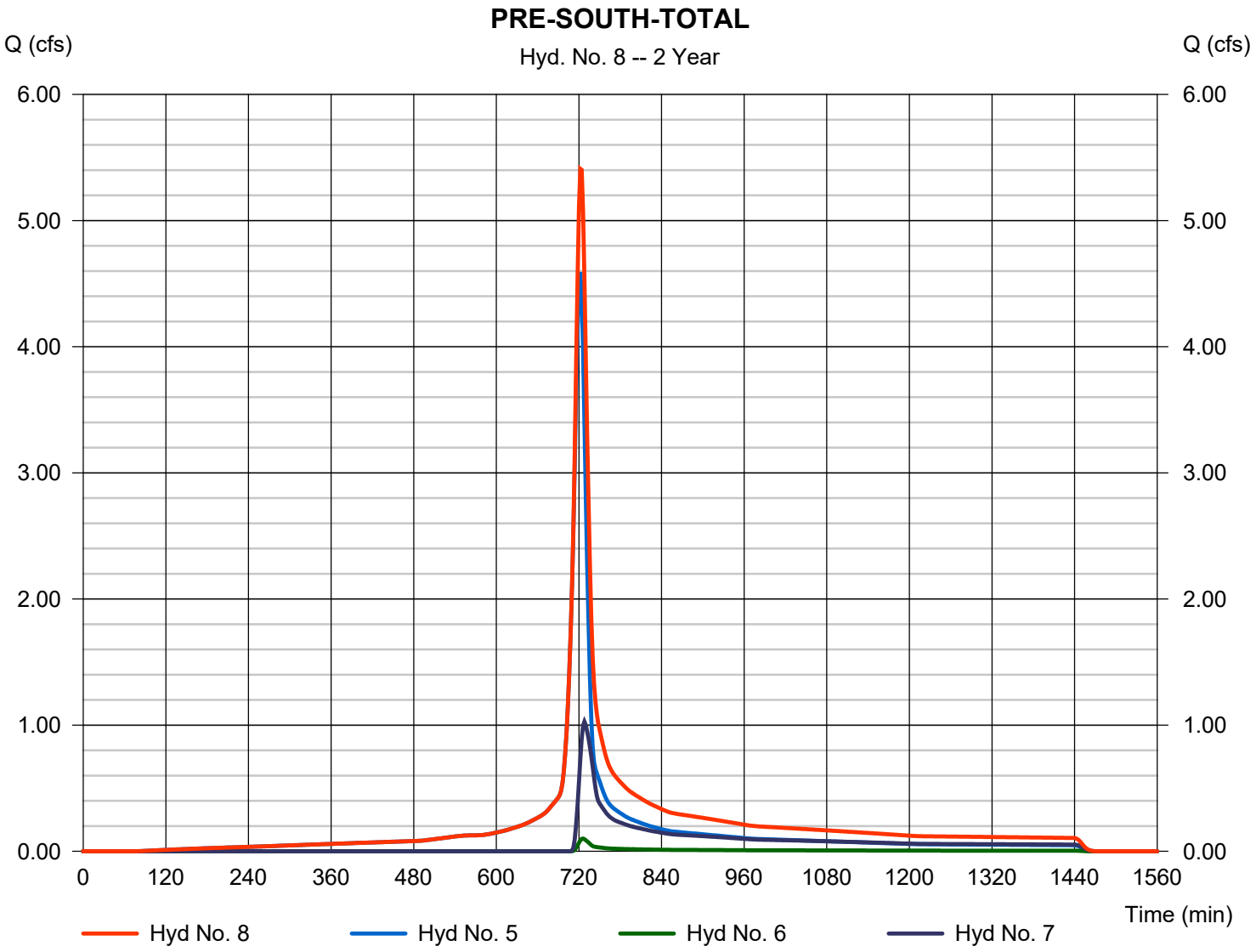
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 8

PRE-SOUTH-TOTAL

Hydrograph type	= Combine	Peak discharge	= 5.411 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 20,428 cuft
Inflow hyds.	= 5, 6, 7	Contrib. drain. area	= 5.410 ac



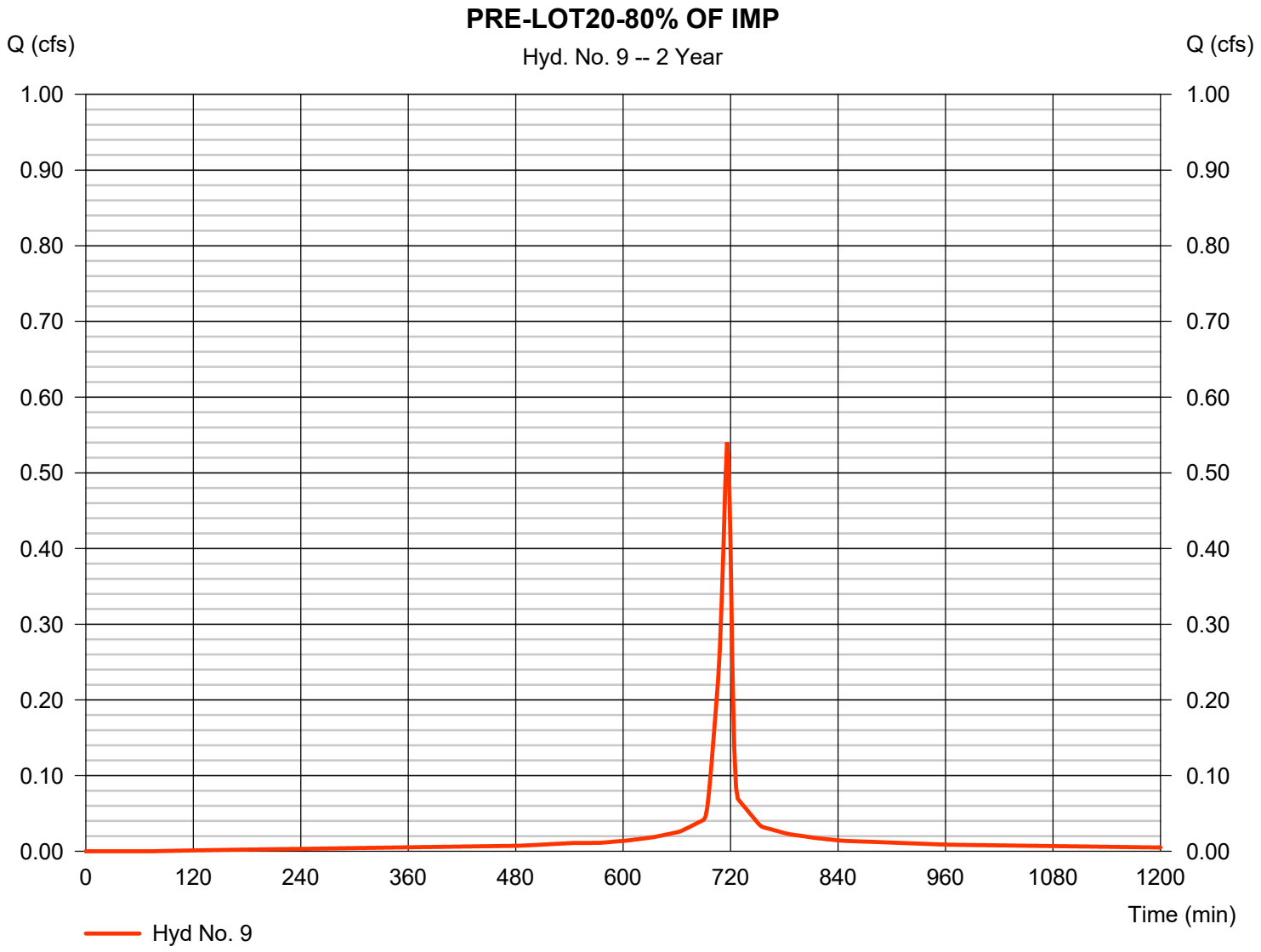
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 9

PRE-LOT20-80% OF IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.540 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	1,266 cuft
Drainage area	=	0.119 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



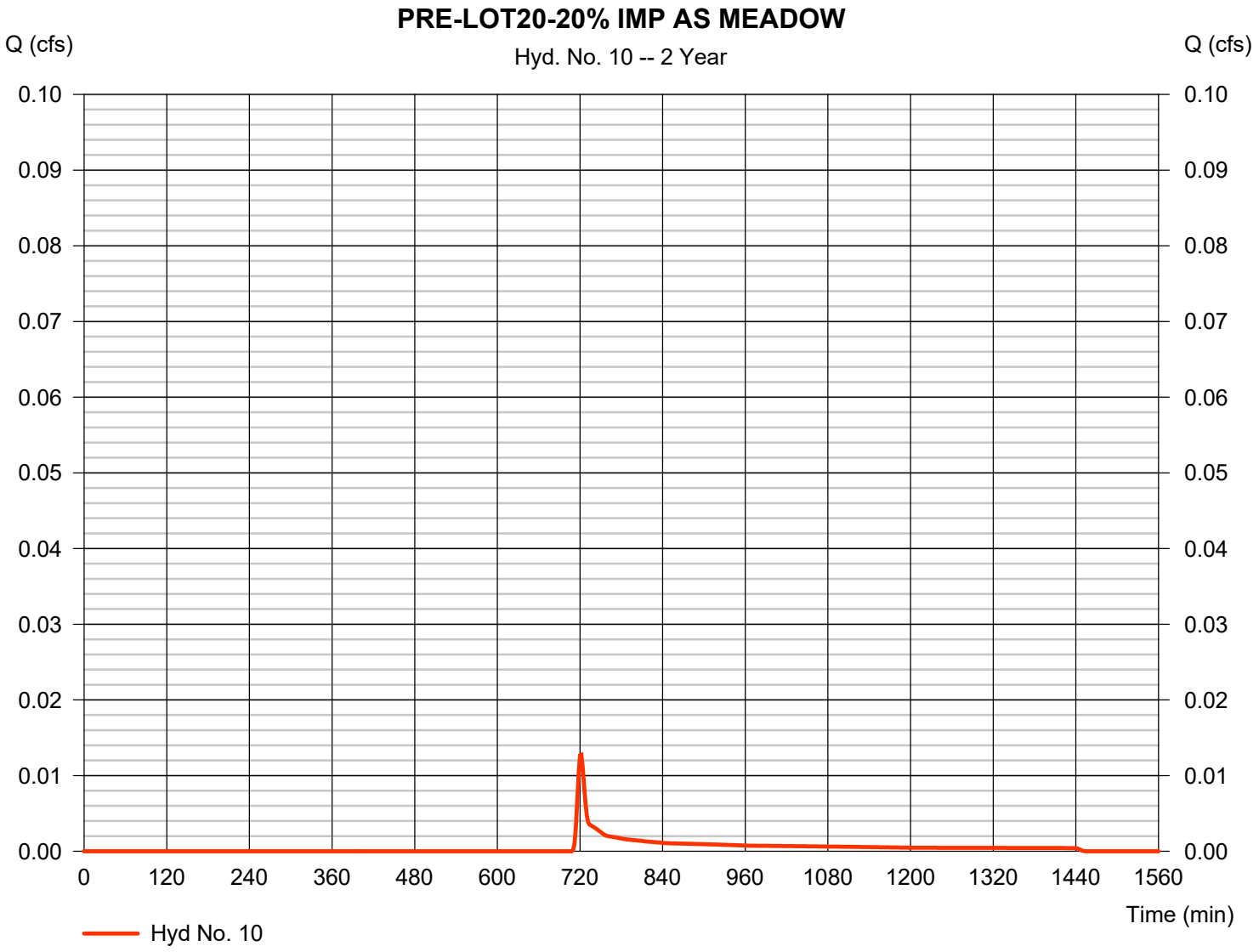
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 10

PRE-LOT20-20% IMP AS MEADOW

Hydrograph type	= SCS Runoff	Peak discharge	= 0.013 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 43 cuft
Drainage area	= 0.030 ac	Curve number	= 58
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



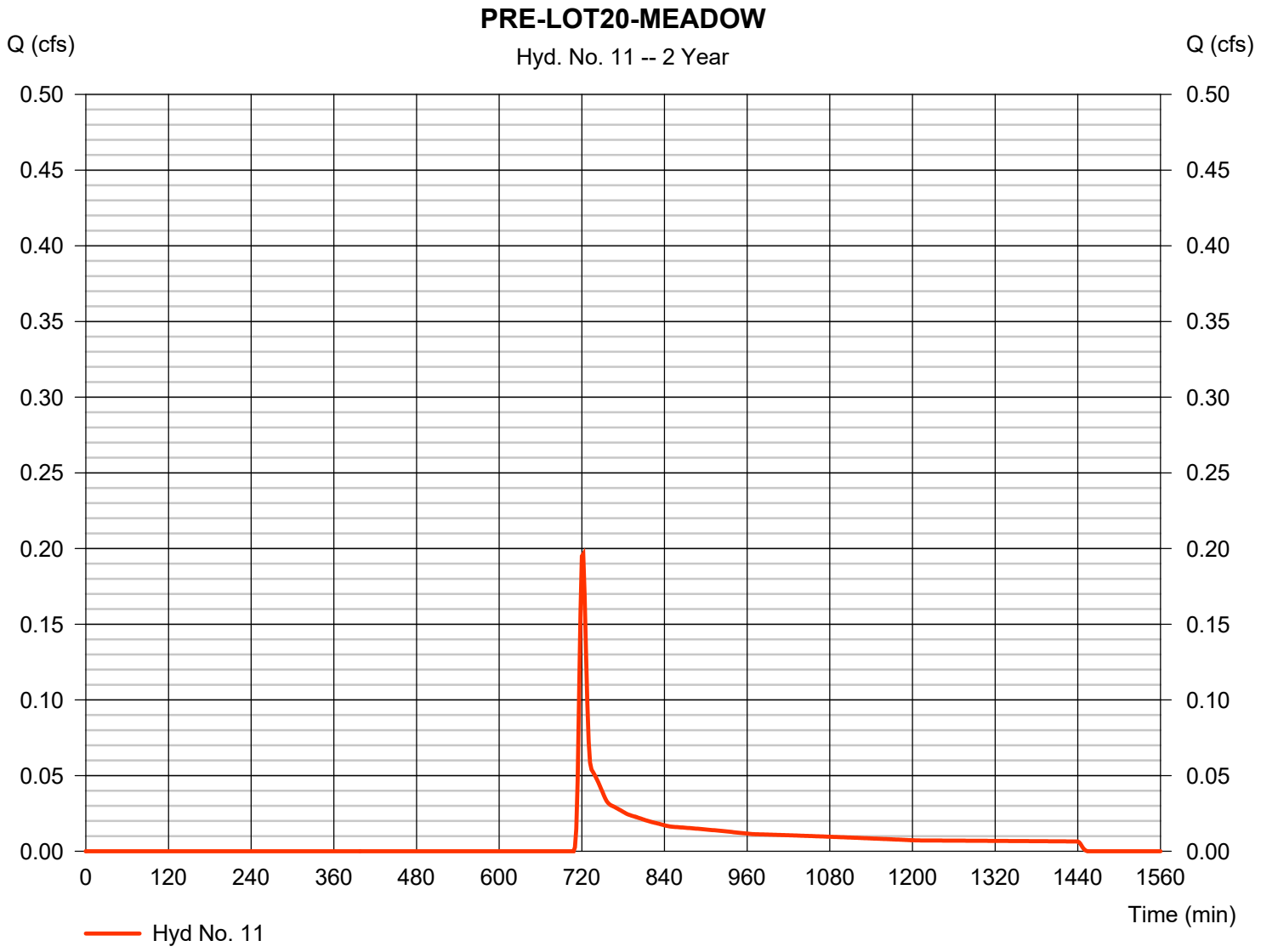
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 11

PRE-LOT20-MEADOW

Hydrograph type	= SCS Runoff	Peak discharge	= 0.196 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 670 cuft
Drainage area	= 0.462 ac	Curve number	= 58
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



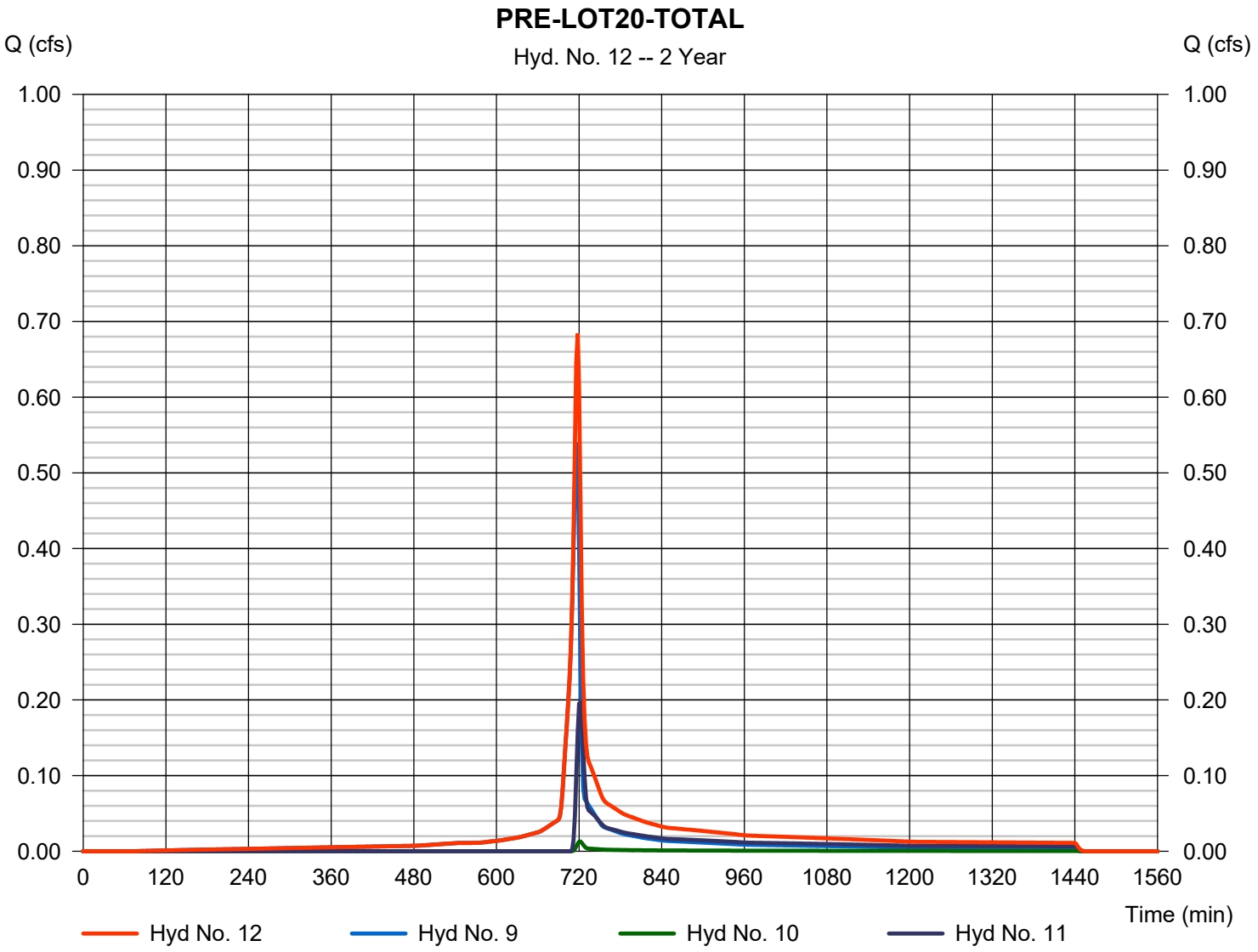
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 12

PRE-LOT20-TOTAL

Hydrograph type	=	Combine	Peak discharge	=	0.684 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	1,979 cuft
Inflow hyds.	=	9, 10, 11	Contrib. drain. area	=	0.611 ac



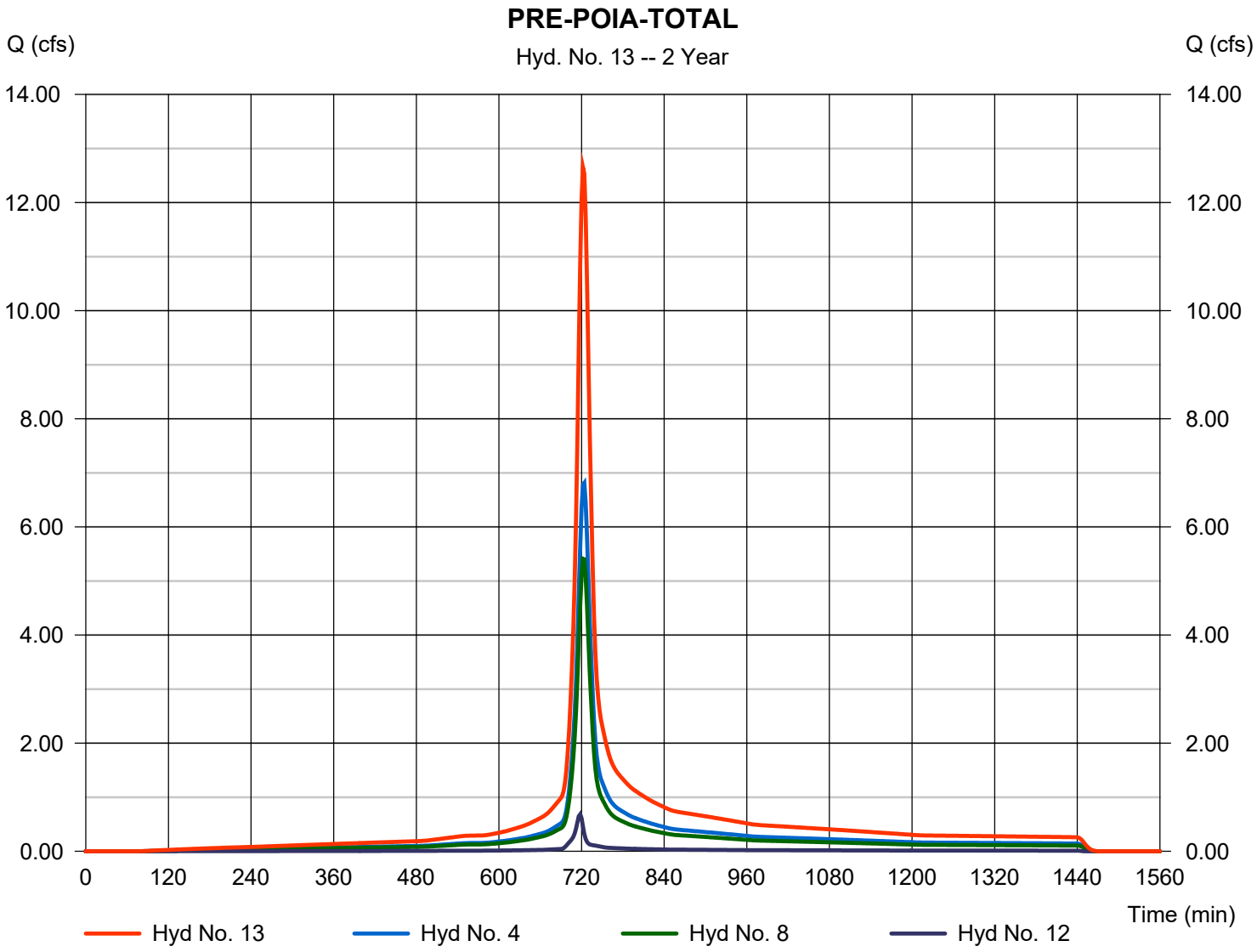
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 13

PRE-POIA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 12.65 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 48,764 cuft
Inflow hyds.	= 4, 8, 12	Contrib. drain. area	= 0.000 ac



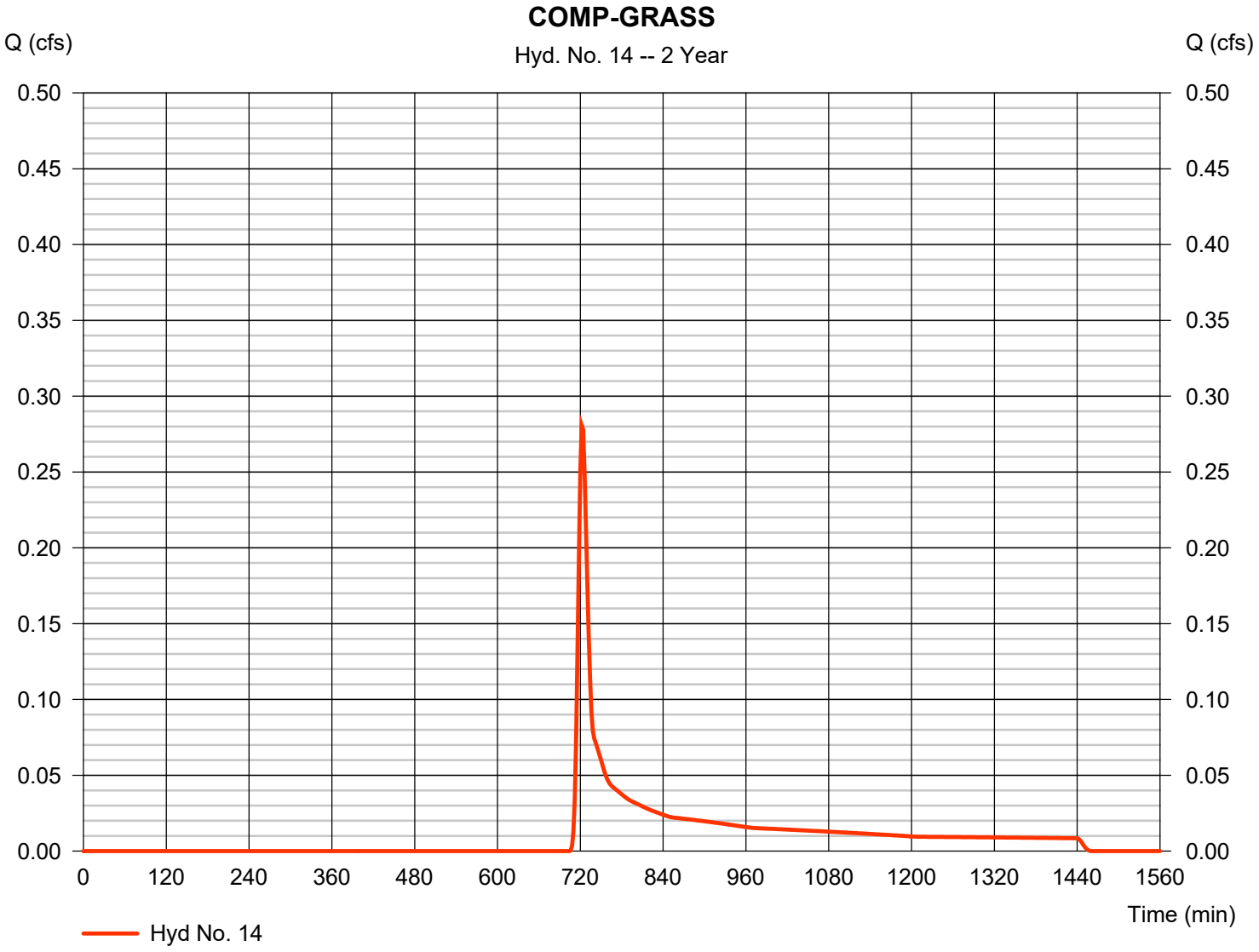
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 14

COMP-GRASS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.281 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 974 cuft
Drainage area	= 0.509 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



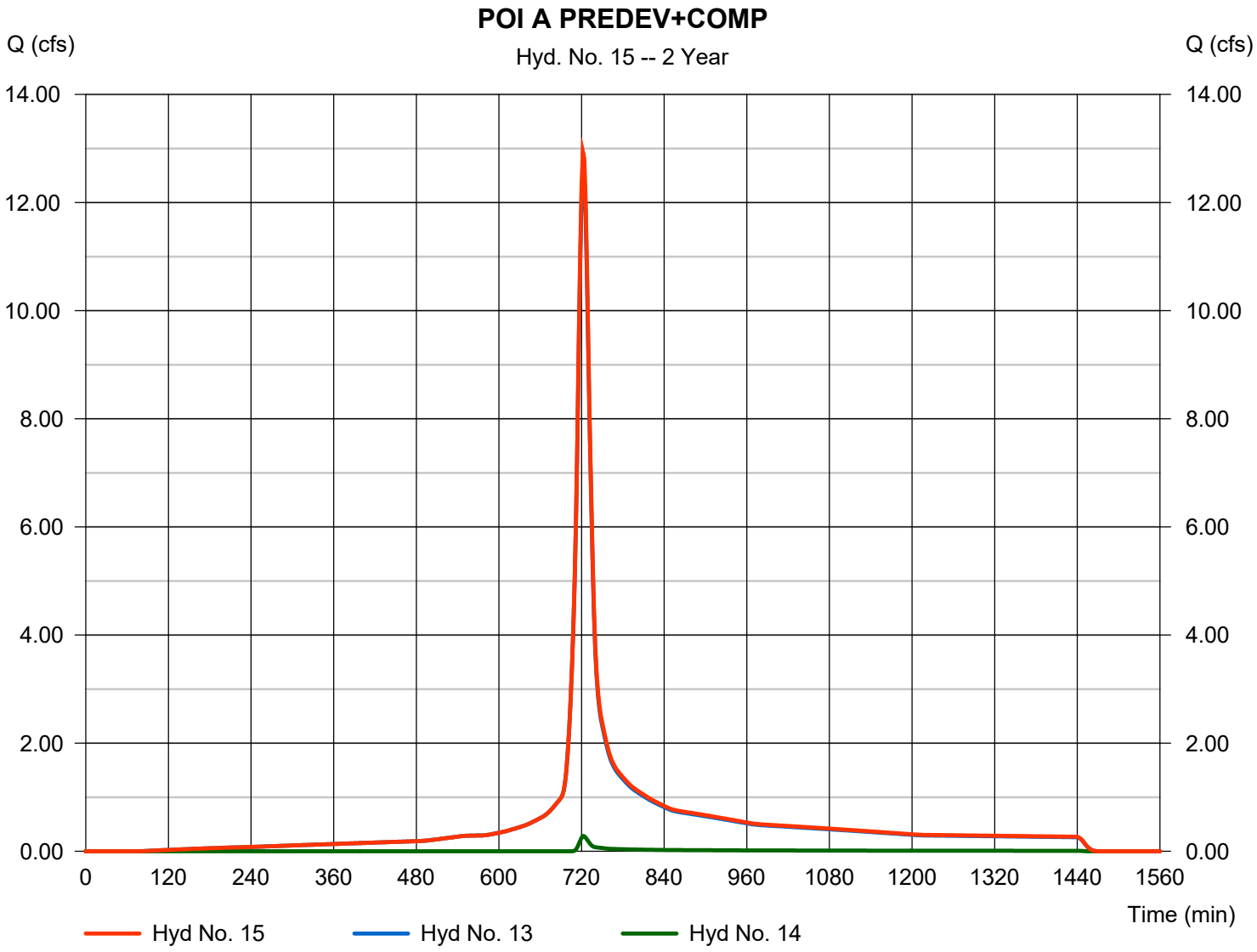
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 15

POI A PREDEV+COMP

Hydrograph type	= Combine	Peak discharge	= 12.93 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 49,738 cuft
Inflow hyds.	= 13, 14	Contrib. drain. area	= 0.509 ac



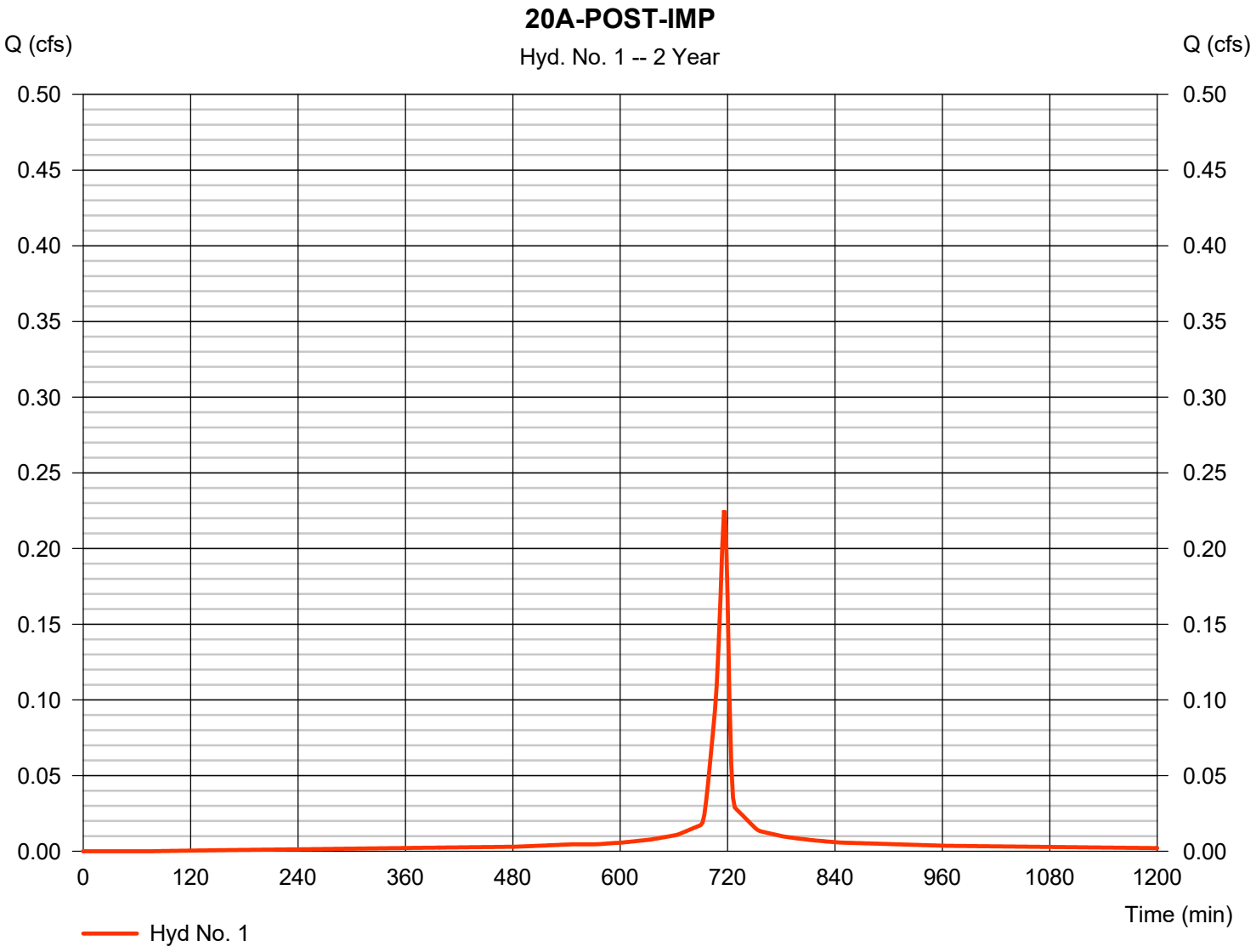
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 1

20A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.225 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 527 cuft
Drainage area	= 0.051 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



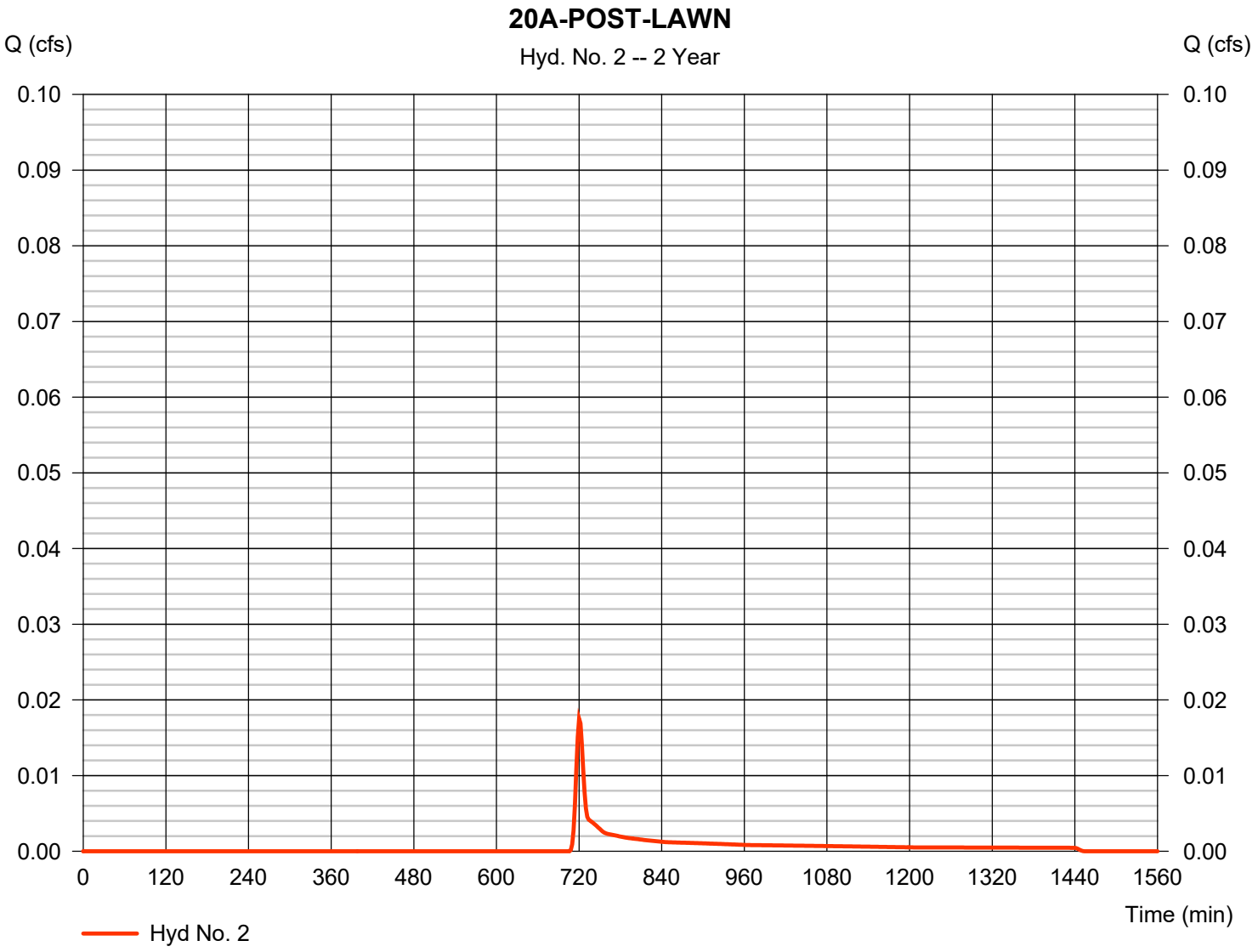
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 2

20A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.017 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 51 cuft
Drainage area	= 0.030 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



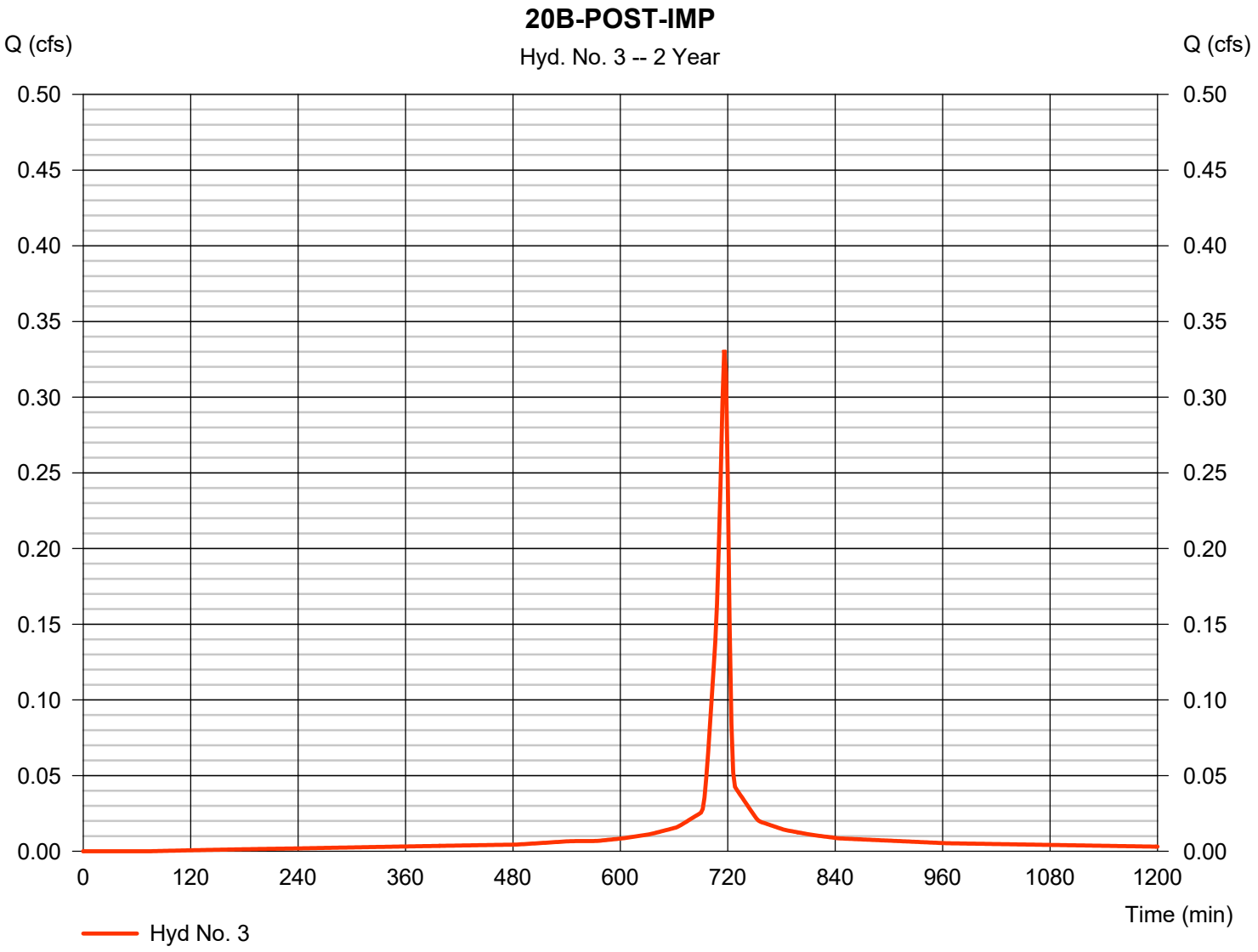
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 3

20B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.331 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 775 cuft
Drainage area	= 0.075 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



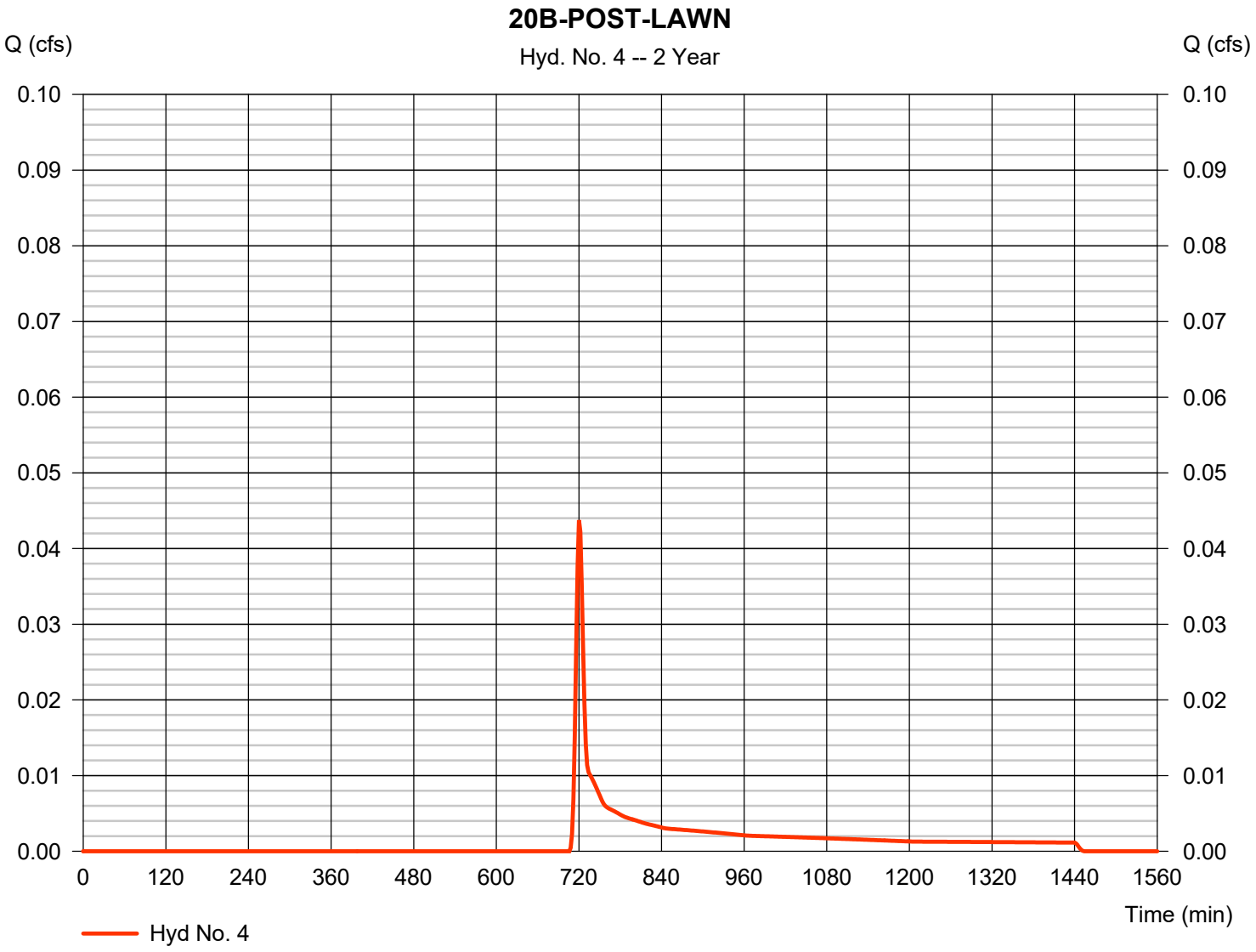
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 4

20B-POST-LAWN

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.044 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	129 cuft
Drainage area	=	0.075 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



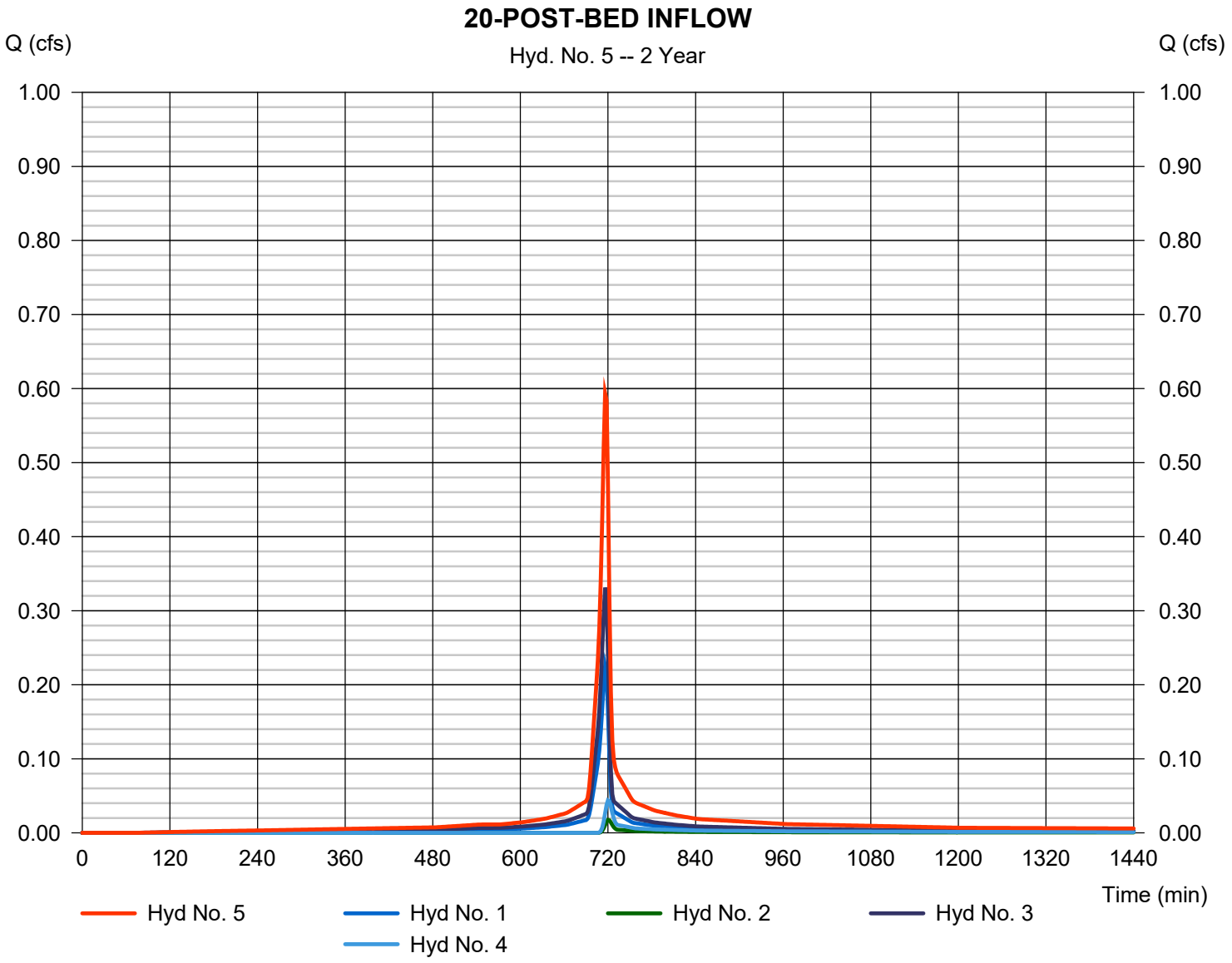
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 5

20-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	0.593 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	1,483 cuft
Inflow hyds.	=	1, 2, 3, 4	Contrib. drain. area	=	0.231 ac



Hydrograph Report

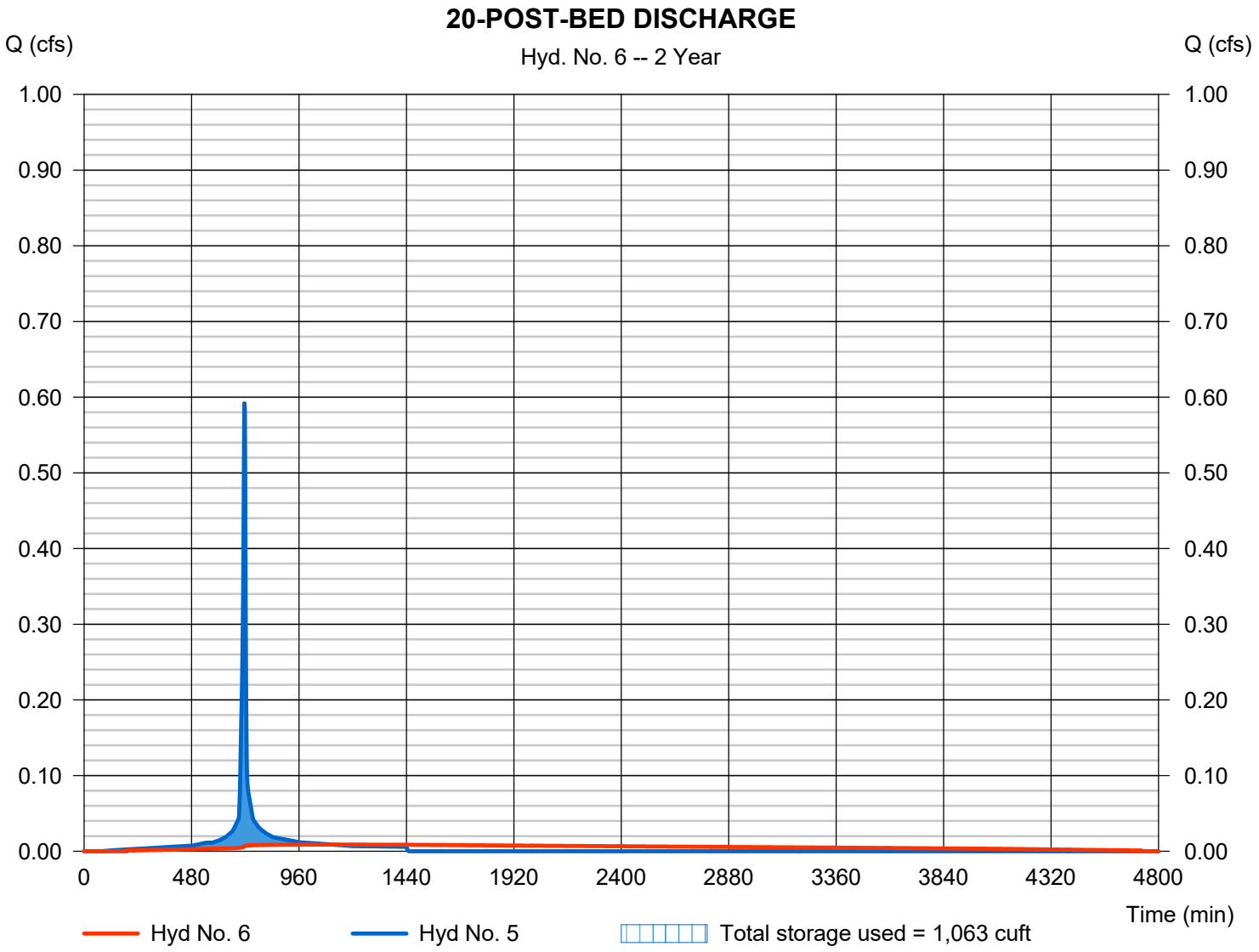
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 6

20-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.009 cfs
Storm frequency	=	2 yrs	Time to peak	=	1112 min
Time interval	=	2 min	Hyd. volume	=	1,474 cuft
Inflow hyd. No.	=	5 - 20-POST-BED INFLOW	Max. Elevation	=	369.33 ft
Reservoir name	=	LOT 20 INFILTRATION BED	Max. Storage	=	1,063 cuft

Storage Indication method used. Outflow includes exfiltration.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 01 / 17 / 2021

Pond No. 1 - LOT 20 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 368.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	368.00	n/a	0	0
0.40	368.40	n/a	92	92
0.80	368.80	n/a	159	251
1.20	369.20	n/a	194	444
1.60	369.60	n/a	213	657
2.00	370.00	n/a	223	880
2.40	370.40	n/a	223	1,103
2.80	370.80	n/a	213	1,316
3.20	371.20	n/a	193	1,509
3.60	371.60	n/a	159	1,668
4.00	372.00	n/a	91	1,760

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 369.50	0.00	0.00	0.00
Length (ft)	= 45.90	0.00	0.00	0.00
Slope (%)	= 1.10	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

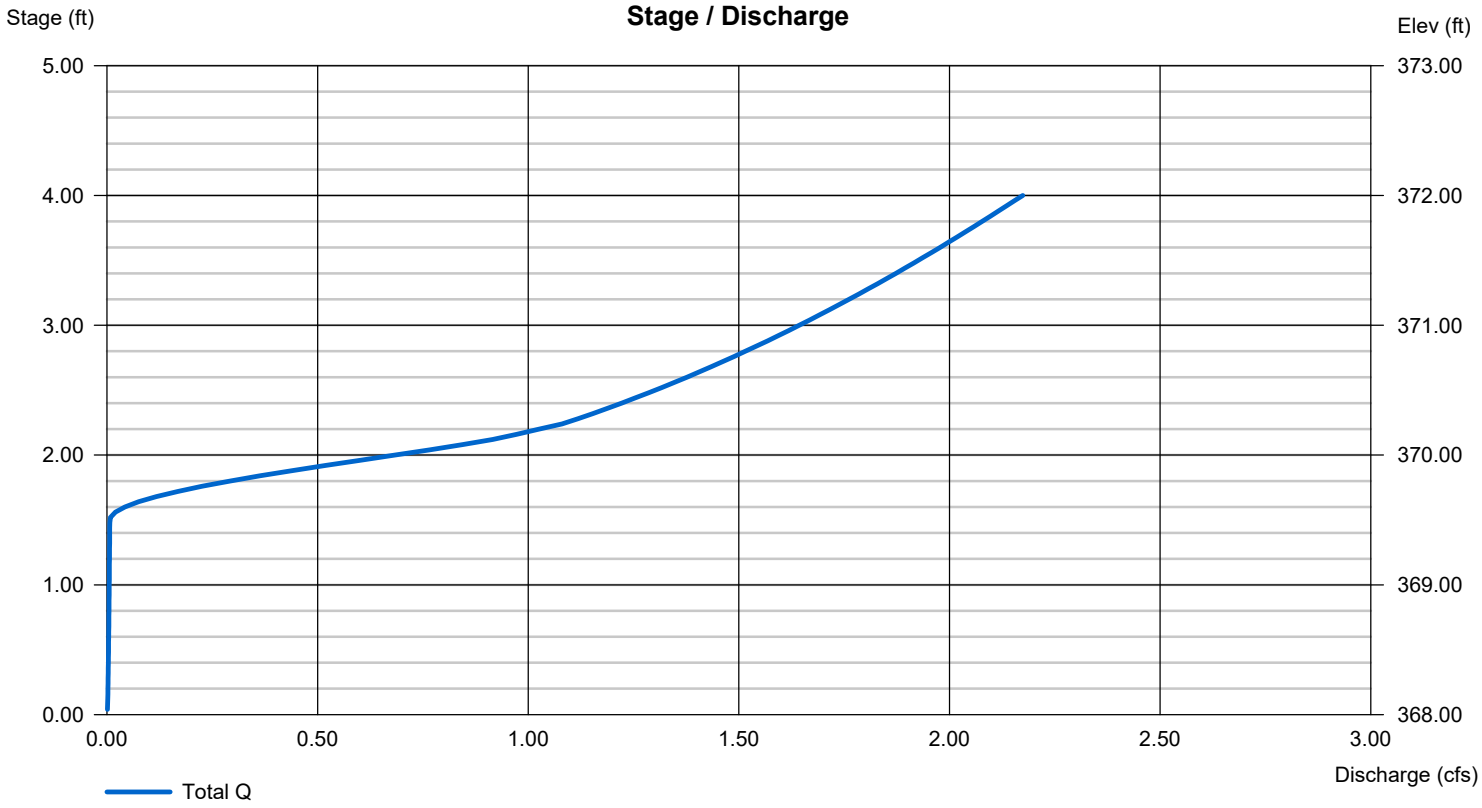
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.390 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



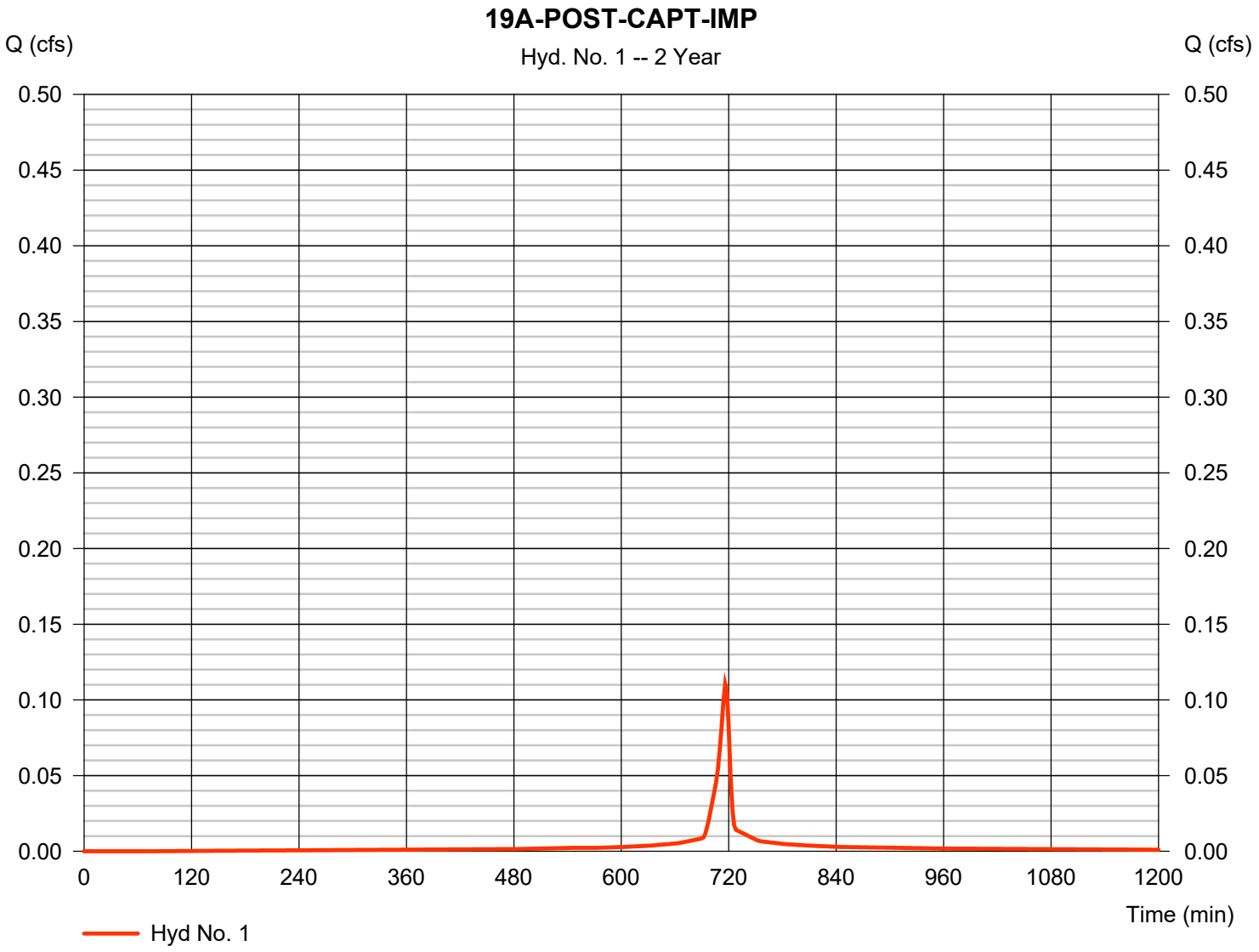
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 01 / 17 / 2021

Hyd. No. 1

19A-POST-CAPT-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.110 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	258 cuft
Drainage area	=	0.025 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



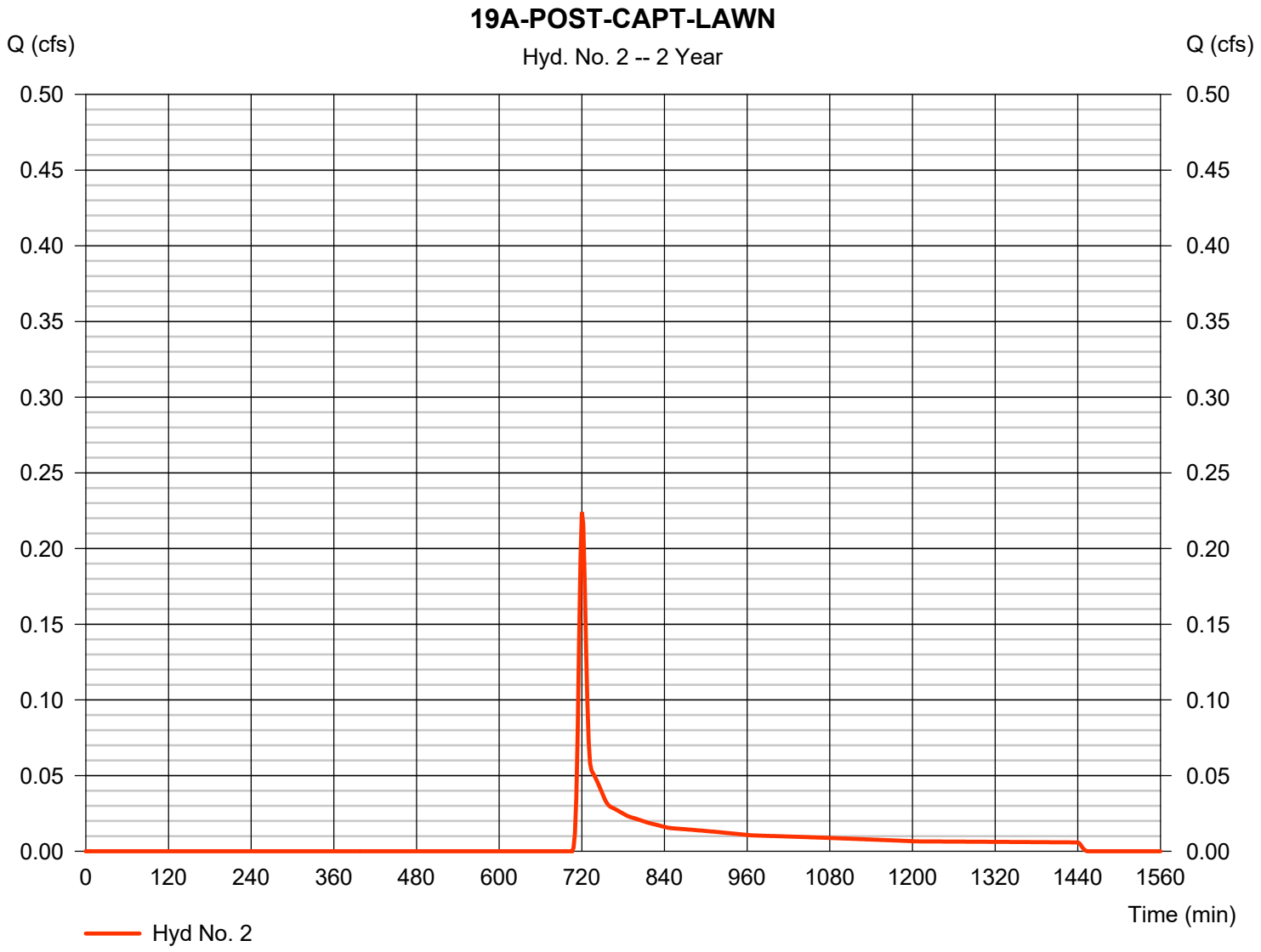
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 01 / 17 / 2021

Hyd. No. 2

19A-POST-CAPT-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.224 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 659 cuft
Drainage area	= 0.384 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



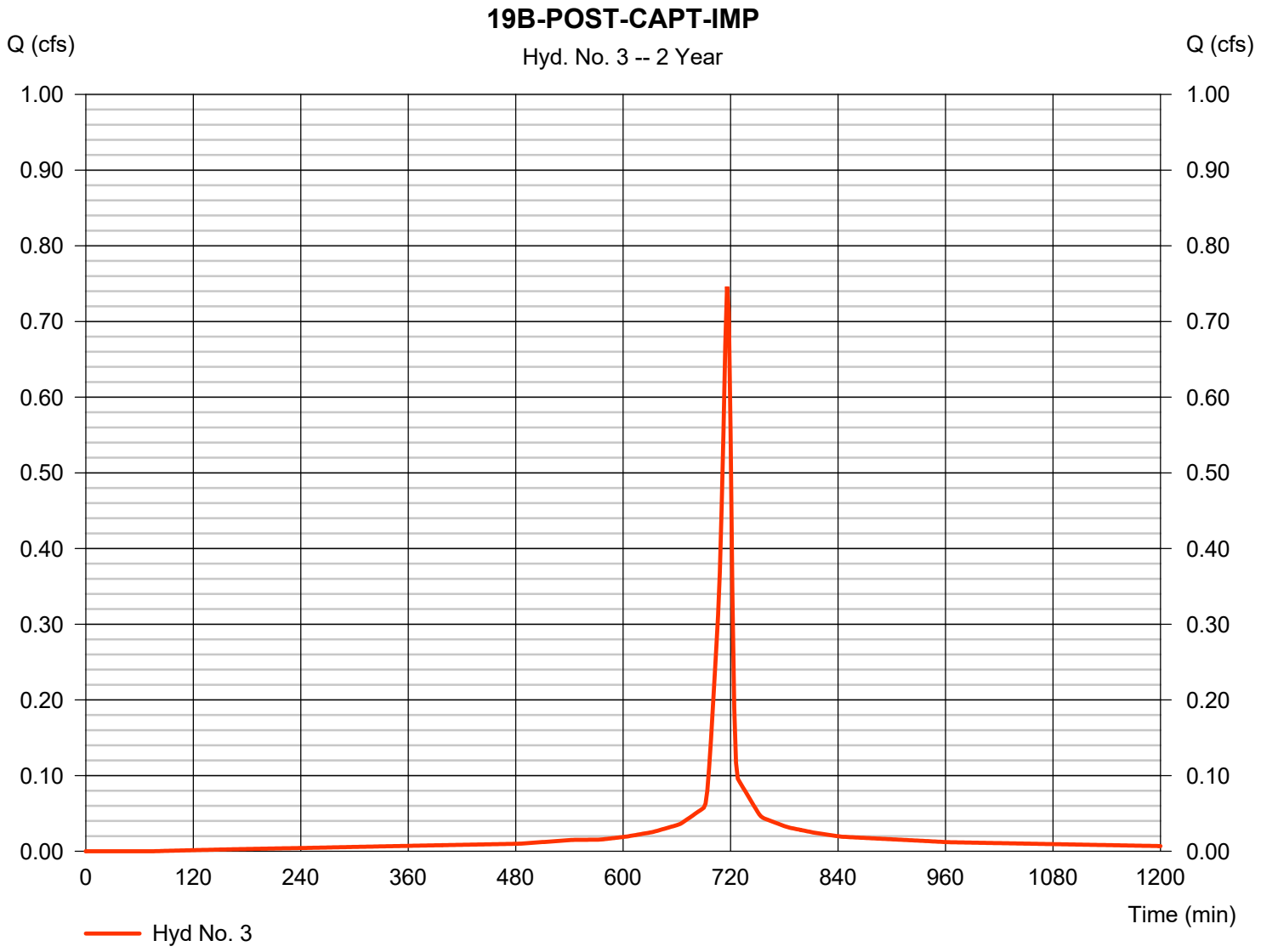
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Sunday, 01 / 17 / 2021

Hyd. No. 3

19B-POST-CAPT-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.746 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,747 cuft
Drainage area	= 0.169 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



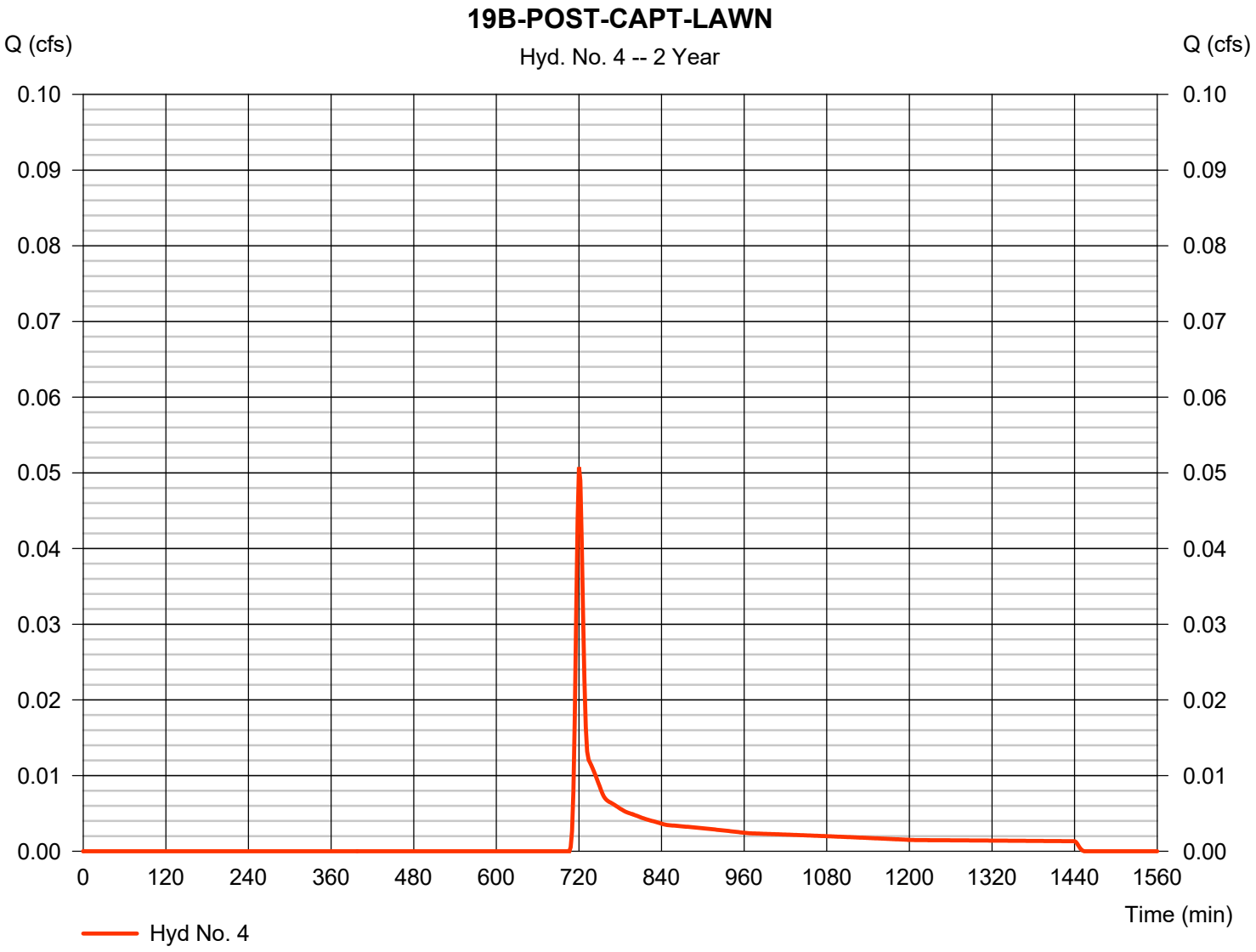
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Sunday, 01 / 17 / 2021

Hyd. No. 4

19B-POST-CAPT-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.051 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 149 cuft
Drainage area	= 0.087 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



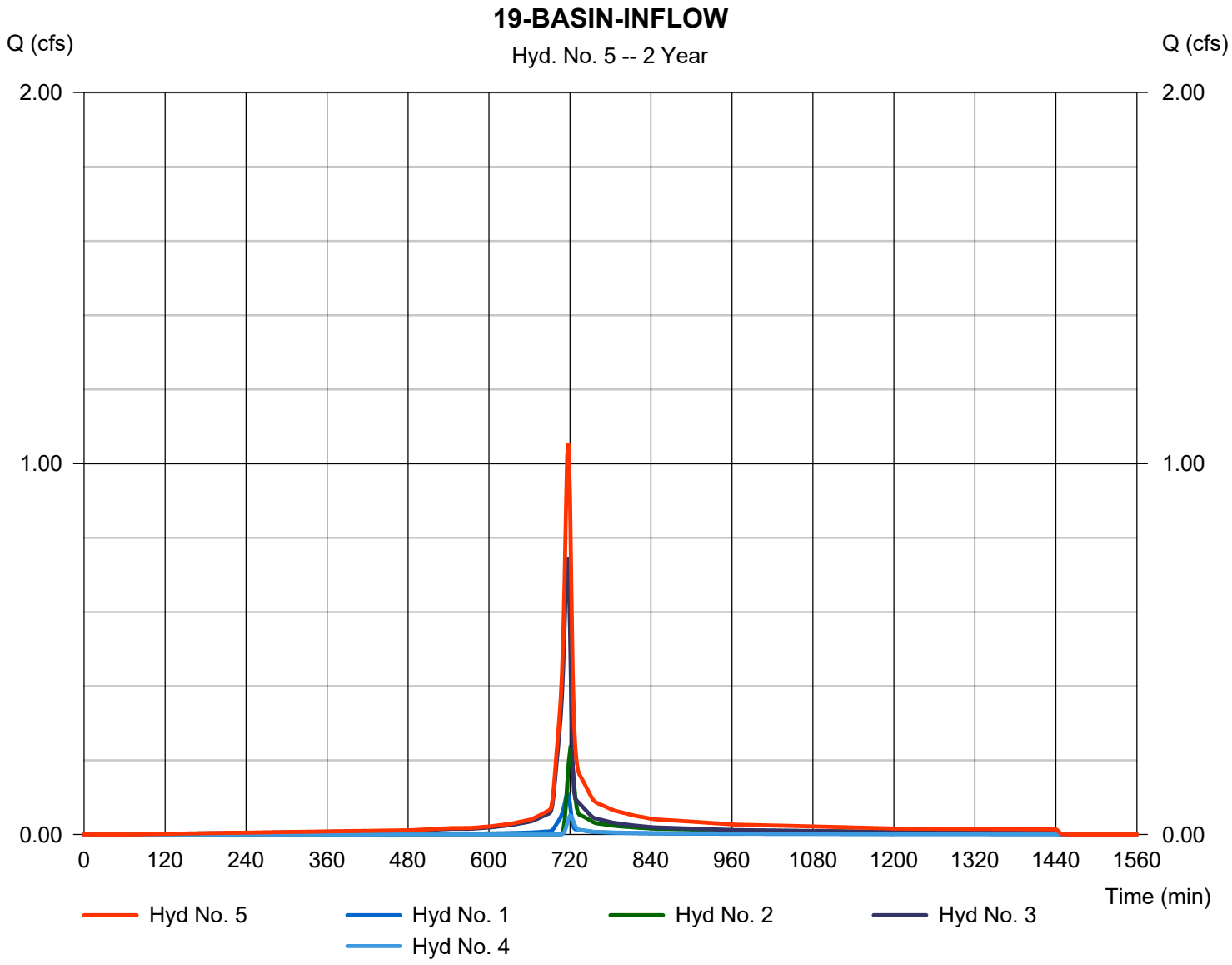
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Sunday, 01 / 17 / 2021

Hyd. No. 5

19-BASIN-INFLOW

Hydrograph type	= Combine	Peak discharge	= 1.055 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,814 cuft
Inflow hyds.	= 1, 2, 3, 4	Contrib. drain. area	= 0.665 ac



Hydrograph Report

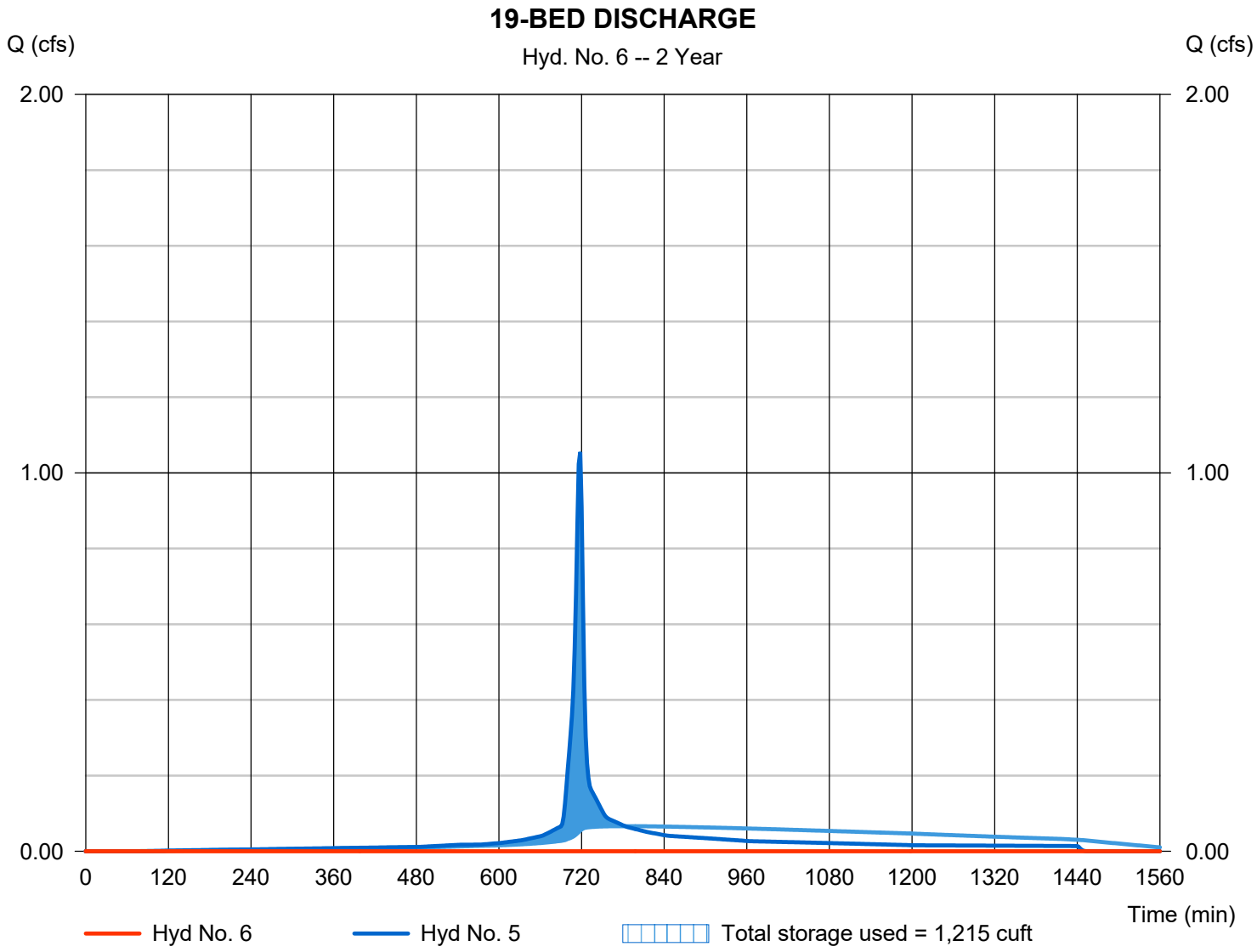
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 01 / 17 / 2021

Hyd. No. 6

19-BED DISCHARGE

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 1540 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 5 - 19-BASIN-INFLOW	Max. Elevation	= 392.99 ft
Reservoir name	= LOT 19 INFIL BED	Max. Storage	= 1,215 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 01 / 17 / 2021

Pond No. 1 - LOT 19 INFIL BED

Pond Data

UG Chambers -Invert elev. = 391.50 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	391.50	n/a	0	0
0.40	391.90	n/a	186	186
0.80	392.30	n/a	323	509
1.20	392.70	n/a	393	901
1.60	393.10	n/a	432	1,333
2.00	393.50	n/a	452	1,785
2.40	393.90	n/a	452	2,237
2.80	394.30	n/a	432	2,669
3.20	394.70	n/a	392	3,061
3.60	395.10	n/a	323	3,384
4.00	395.50	n/a	186	3,569

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 393.75	0.00	0.00	0.00
Length (ft)	= 276.00	0.00	0.00	0.00
Slope (%)	= 12.20	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

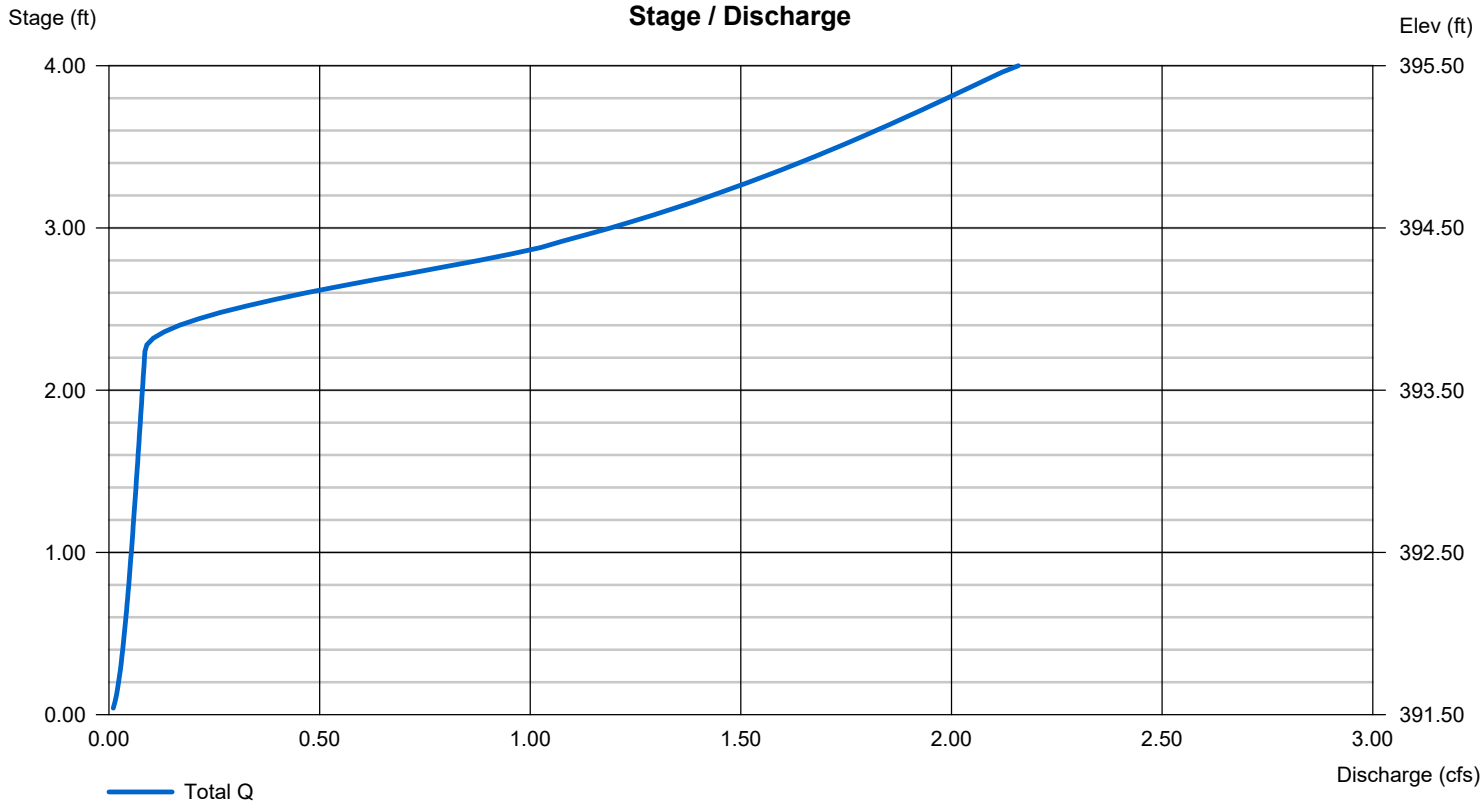
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.920 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



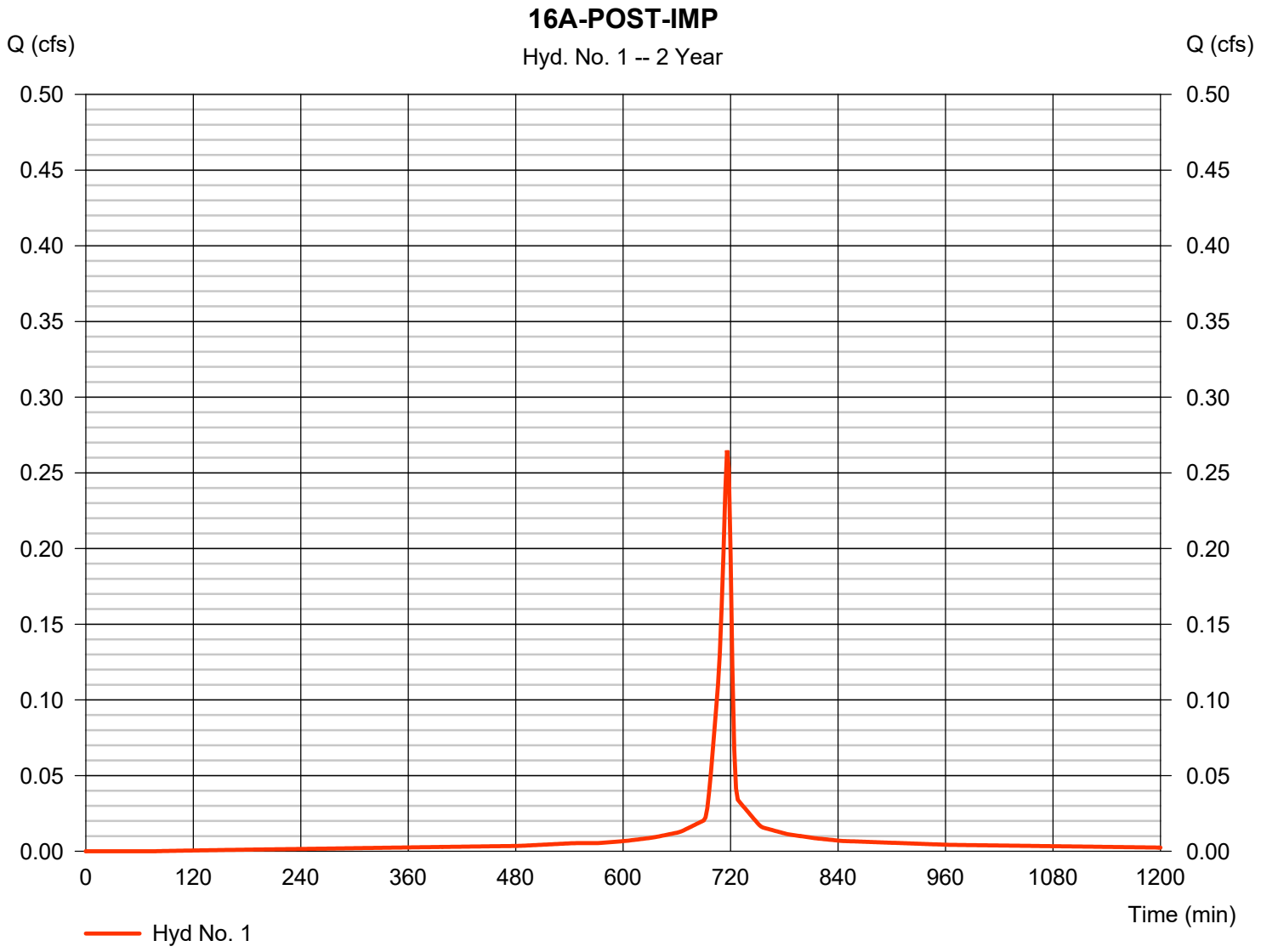
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 1

16A-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.265 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	620 cuft
Drainage area	=	0.060 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



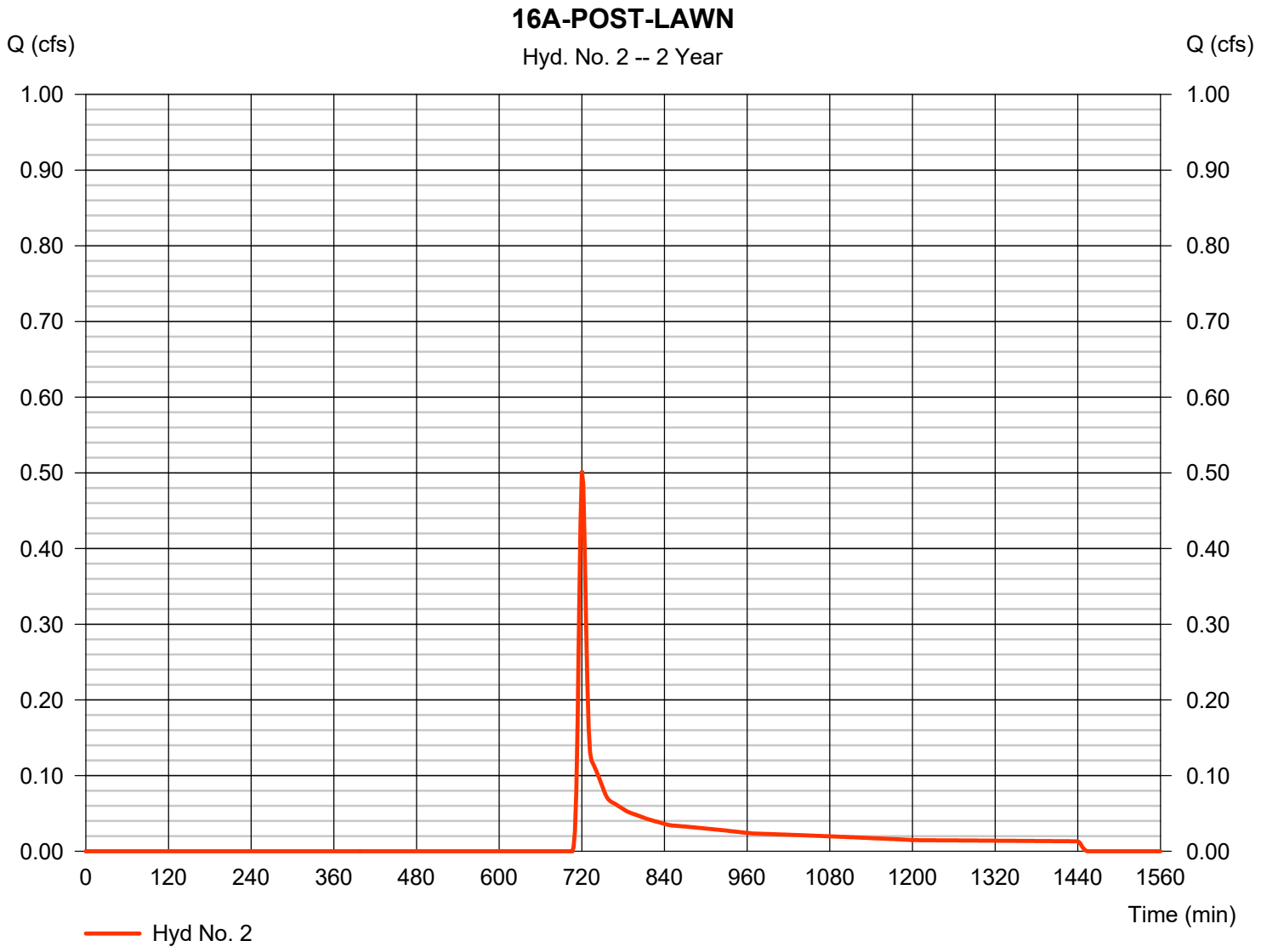
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 2

16A-POST-LAWN

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.503 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	1,479 cuft
Drainage area	=	0.862 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



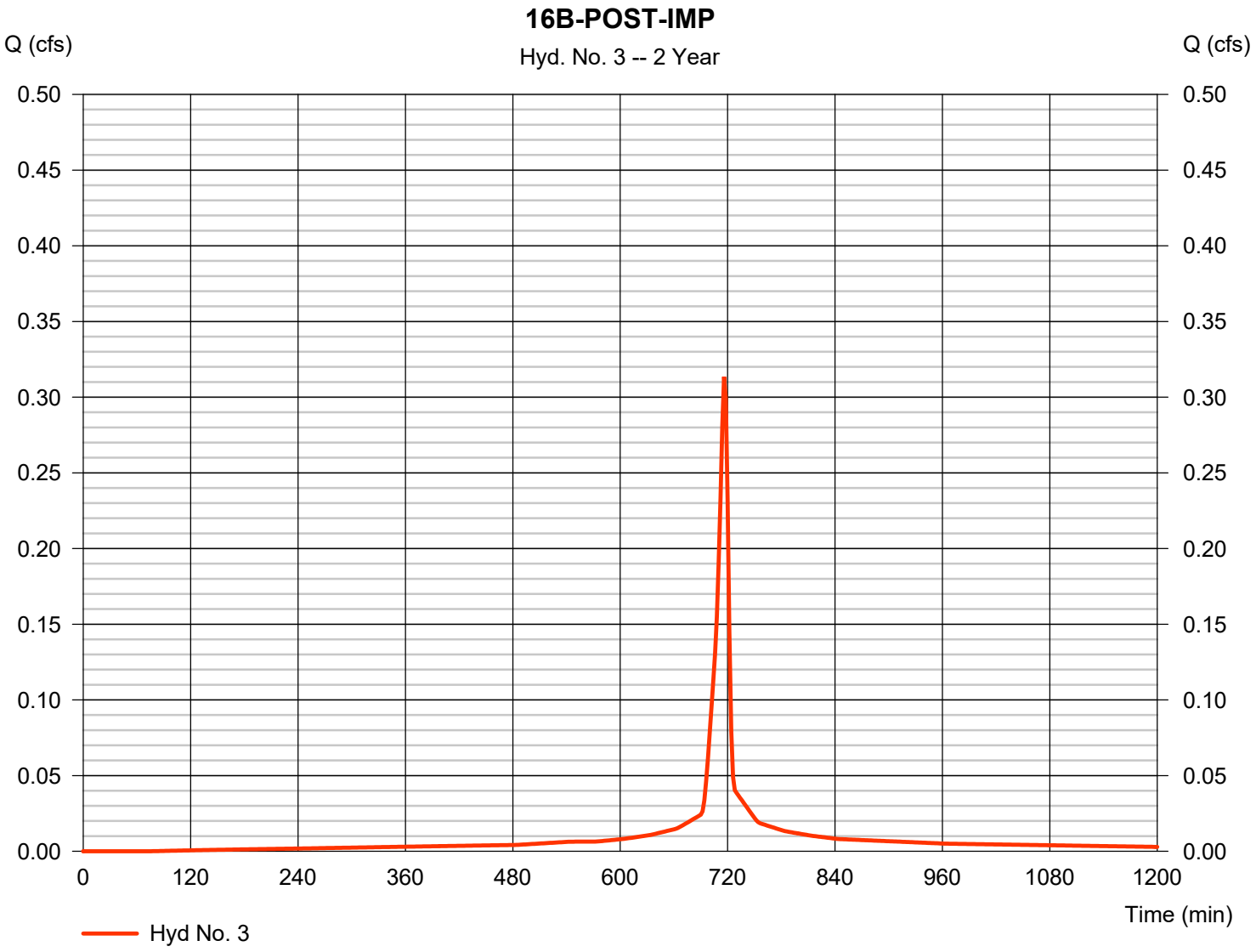
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 3

16B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.313 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 734 cuft
Drainage area	= 0.071 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



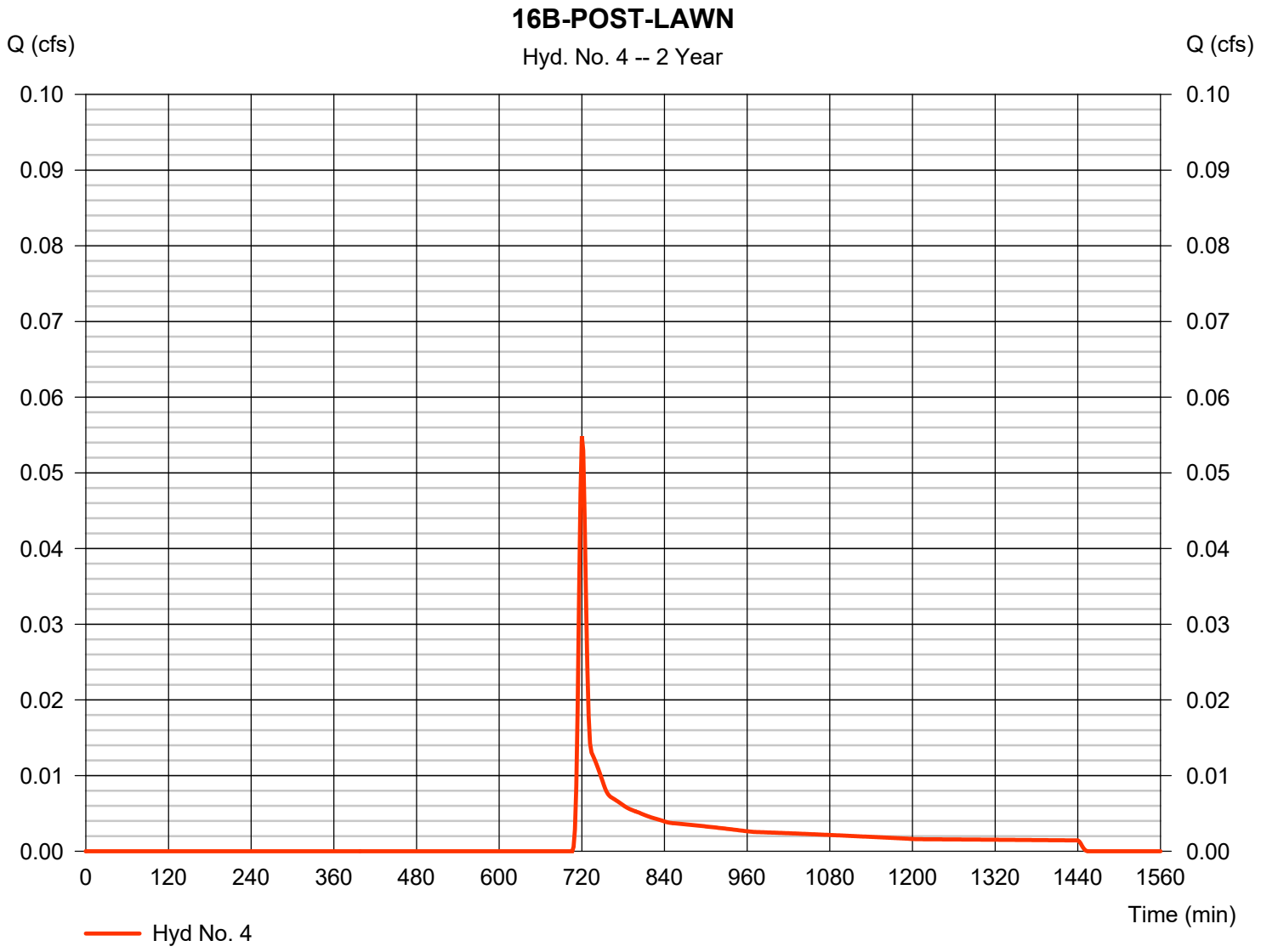
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 4

16B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.055 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 161 cuft
Drainage area	= 0.094 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



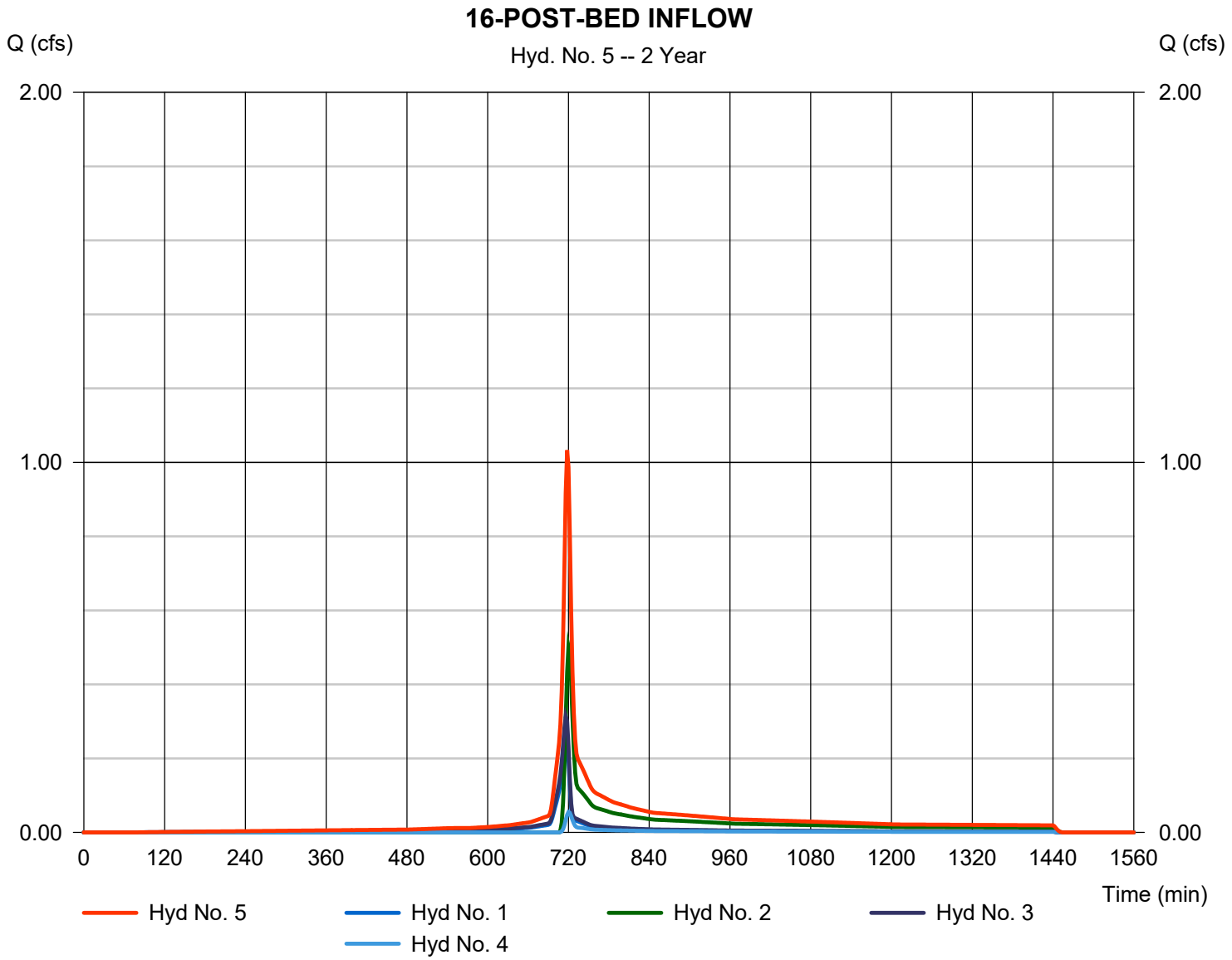
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 5

16-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	1.033 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,995 cuft
Inflow hyds.	=	1, 2, 3, 4	Contrib. drain. area	=	1.087 ac



Hydrograph Report

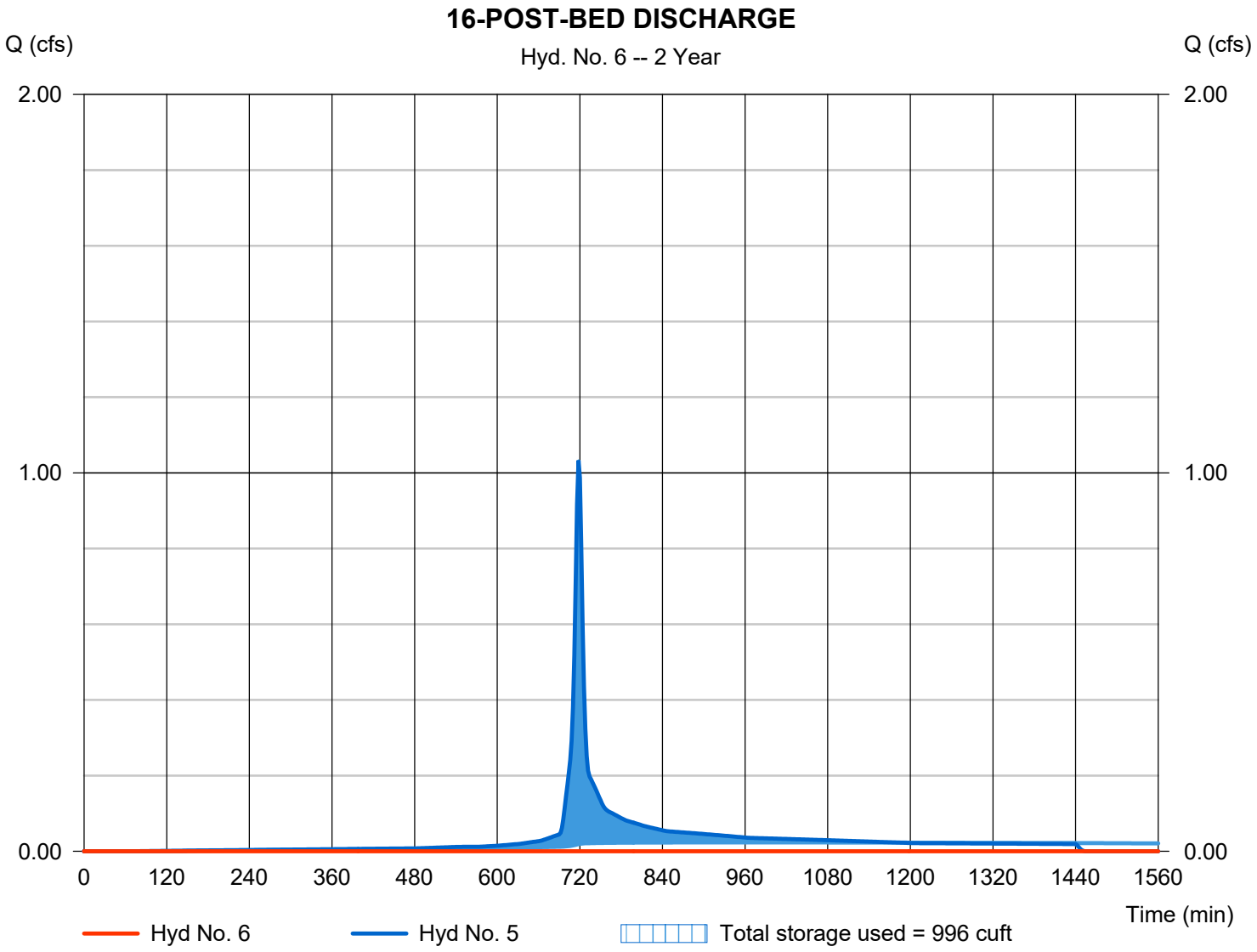
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 6

16-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	n/a
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	5 - 16-POST-BED INFLOW	Max. Elevation	=	401.00 ft
Reservoir name	=	LOT 16 INFILTRATION BED	Max. Storage	=	996 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 1 - LOT 16 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 400.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 90.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	400.00	n/a	0	0
0.40	400.40	n/a	264	264
0.80	400.80	n/a	459	723
1.20	401.20	n/a	558	1,282
1.60	401.60	n/a	615	1,897
2.00	402.00	n/a	643	2,539
2.40	402.40	n/a	643	3,182
2.80	402.80	n/a	615	3,797
3.20	403.20	n/a	558	4,355
3.60	403.60	n/a	459	4,814
4.00	404.00	n/a	264	5,078

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 402.25	0.00	0.00	0.00
Length (ft)	= 29.80	0.00	0.00	0.00
Slope (%)	= 0.80	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

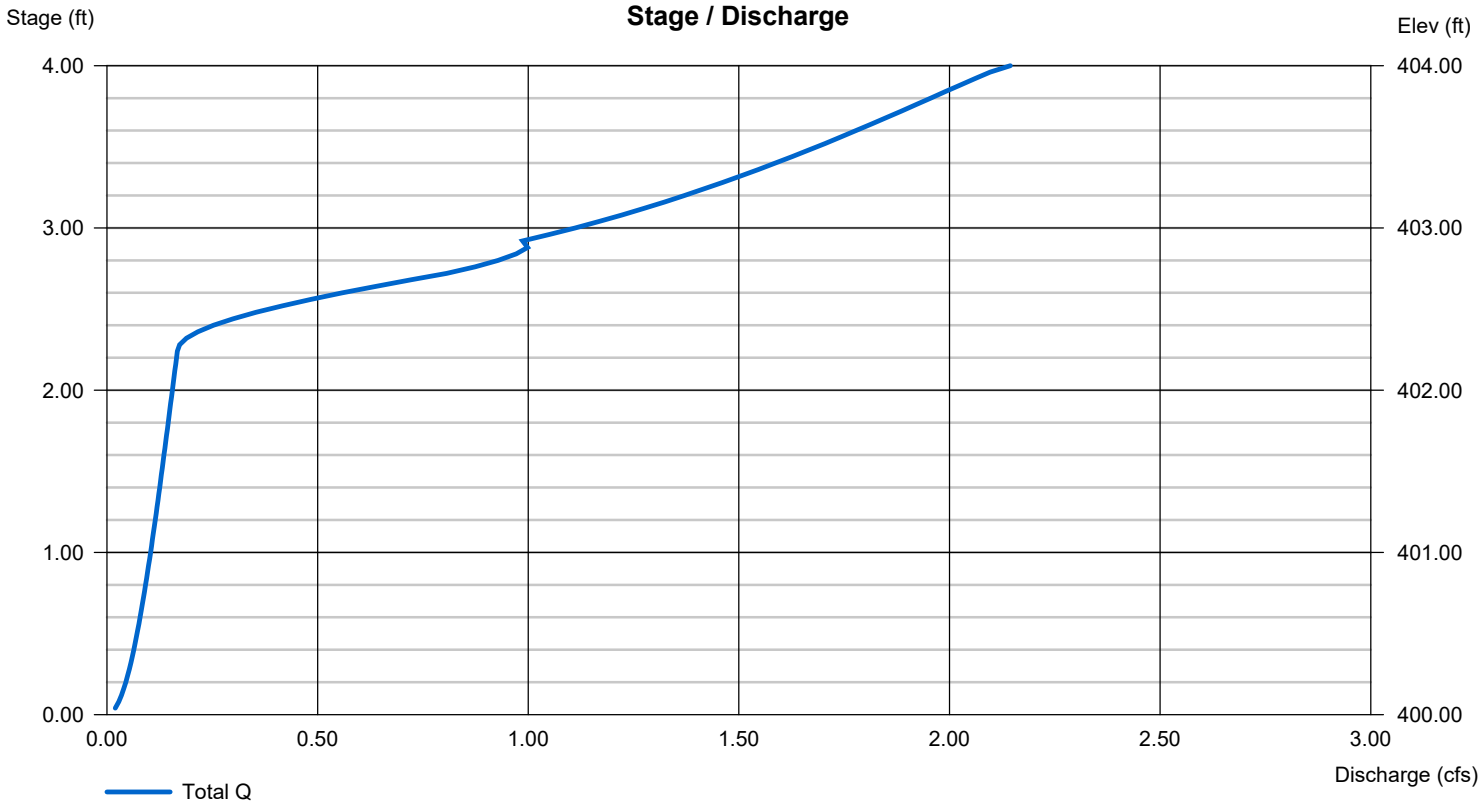
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 2.640 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



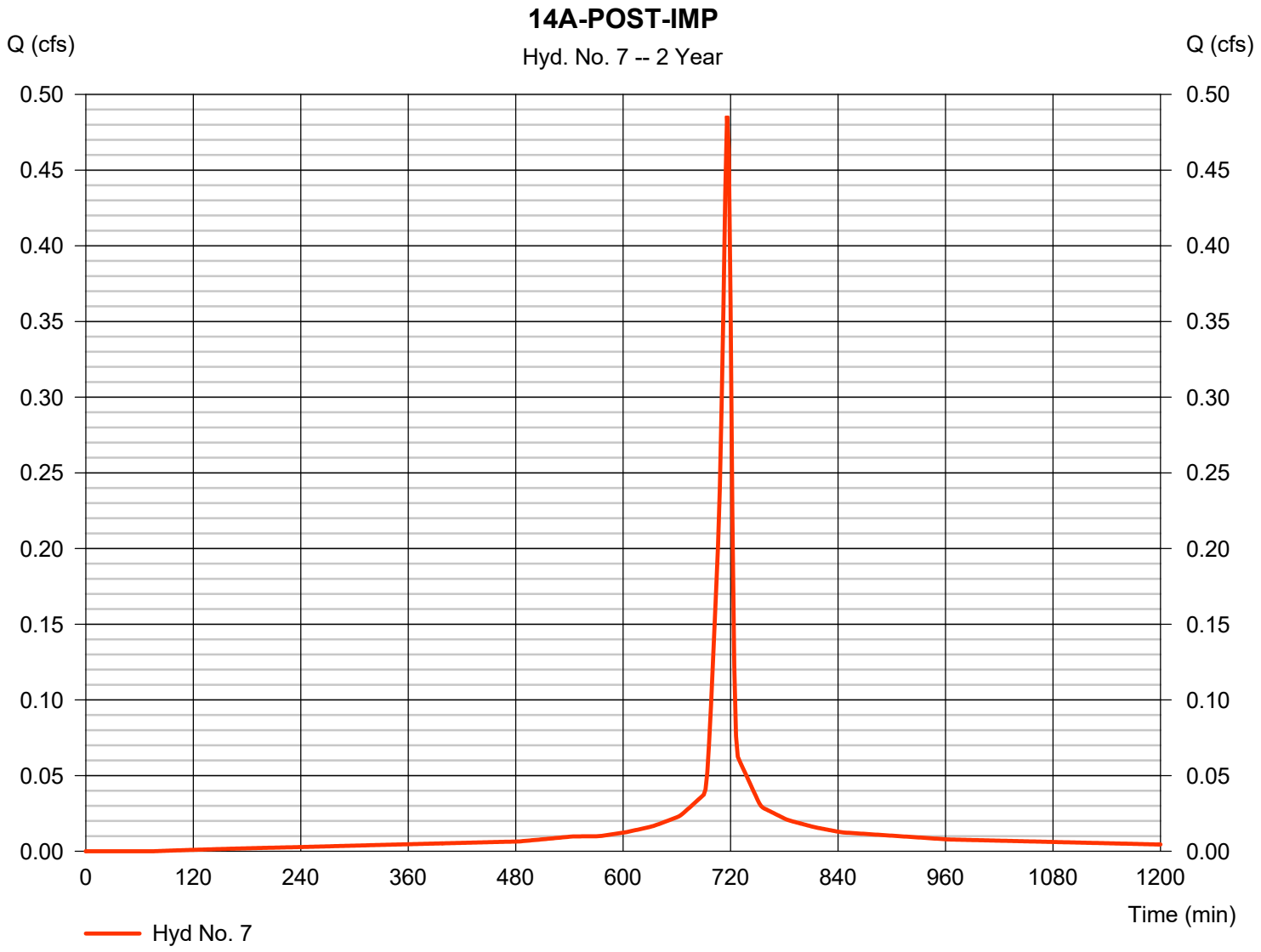
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 7

14A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.486 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,137 cuft
Drainage area	= 0.110 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



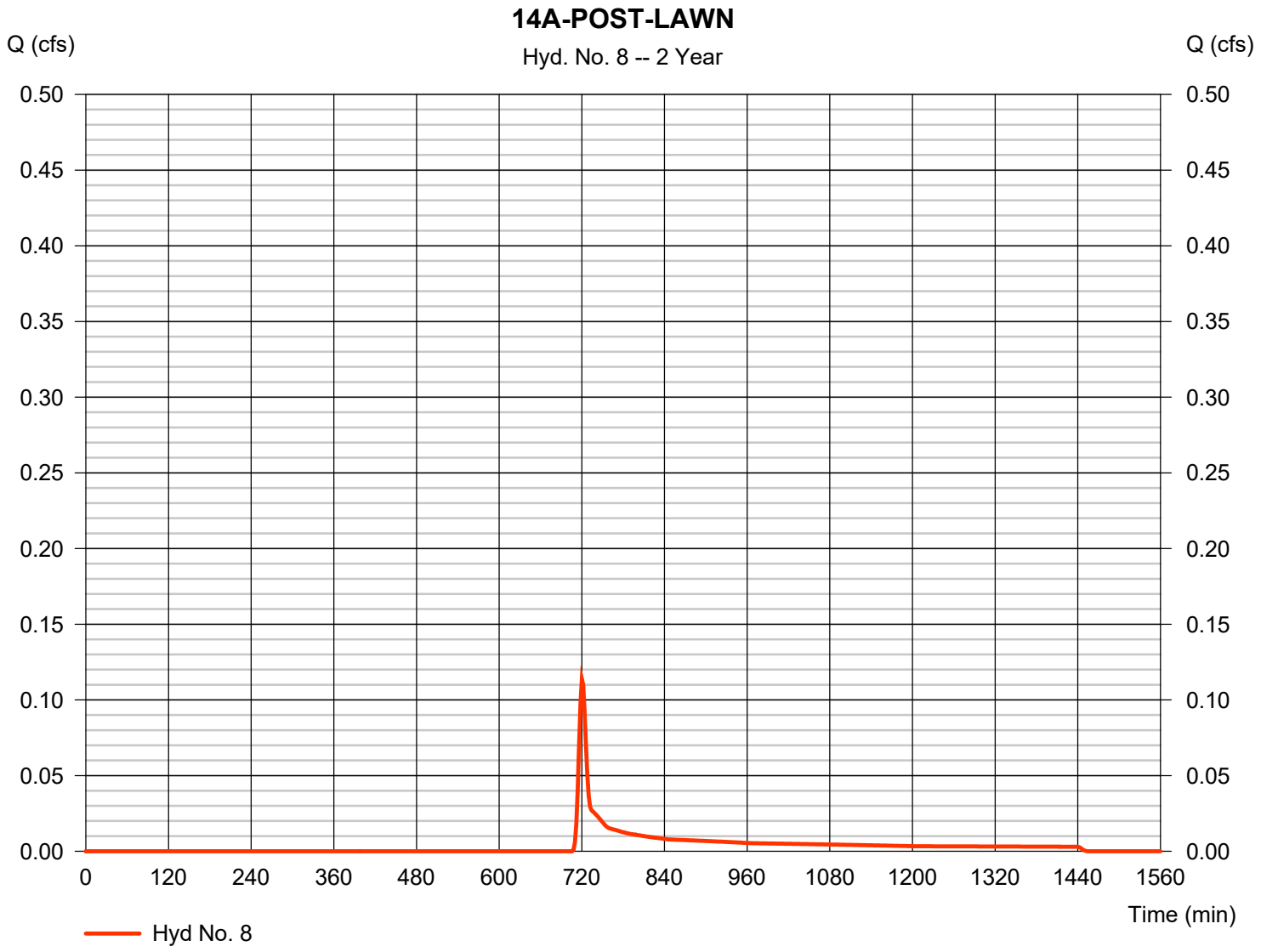
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 8

14A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.114 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 335 cuft
Drainage area	= 0.195 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



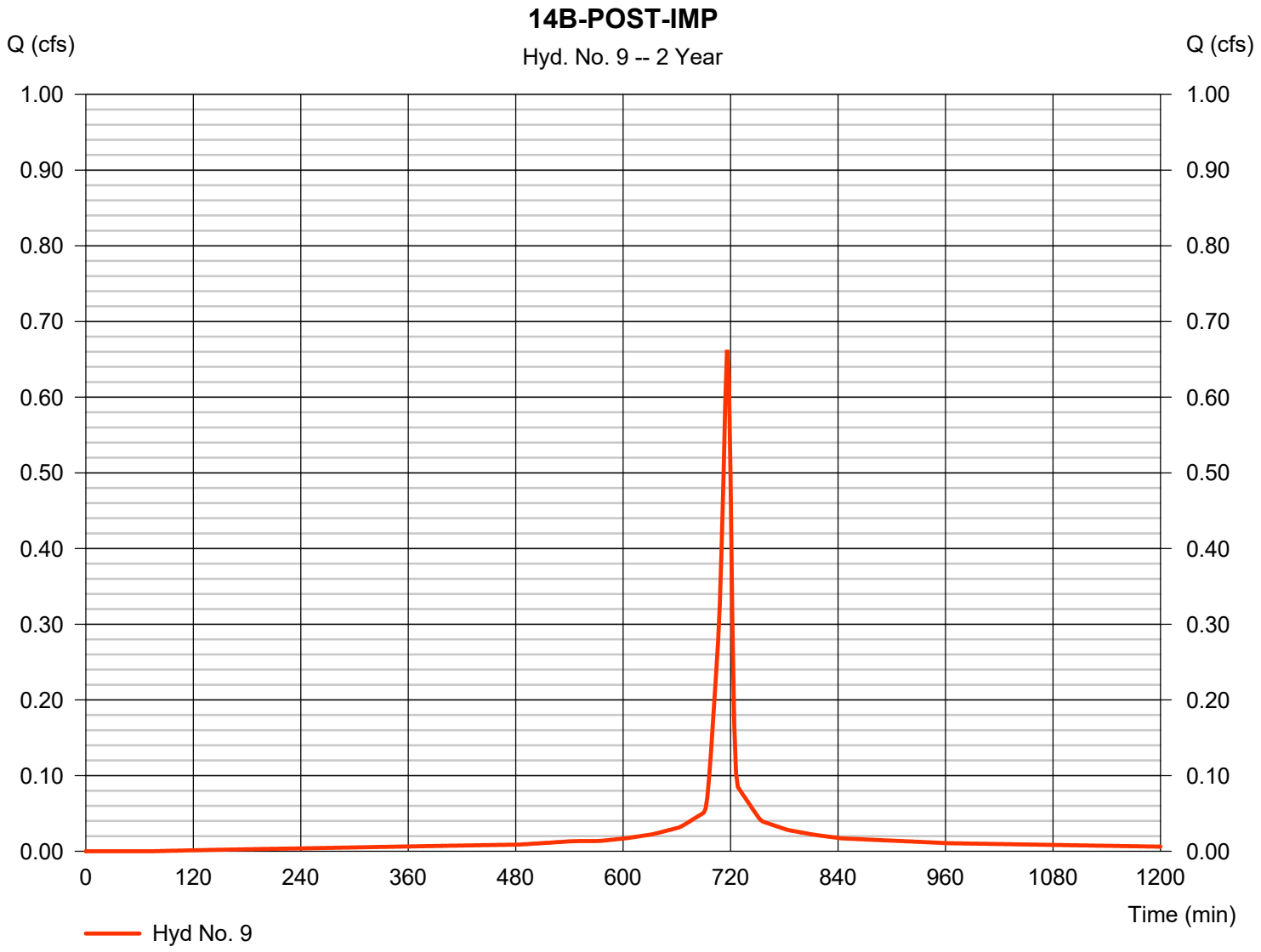
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 9

14B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.662 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,550 cuft
Drainage area	= 0.150 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



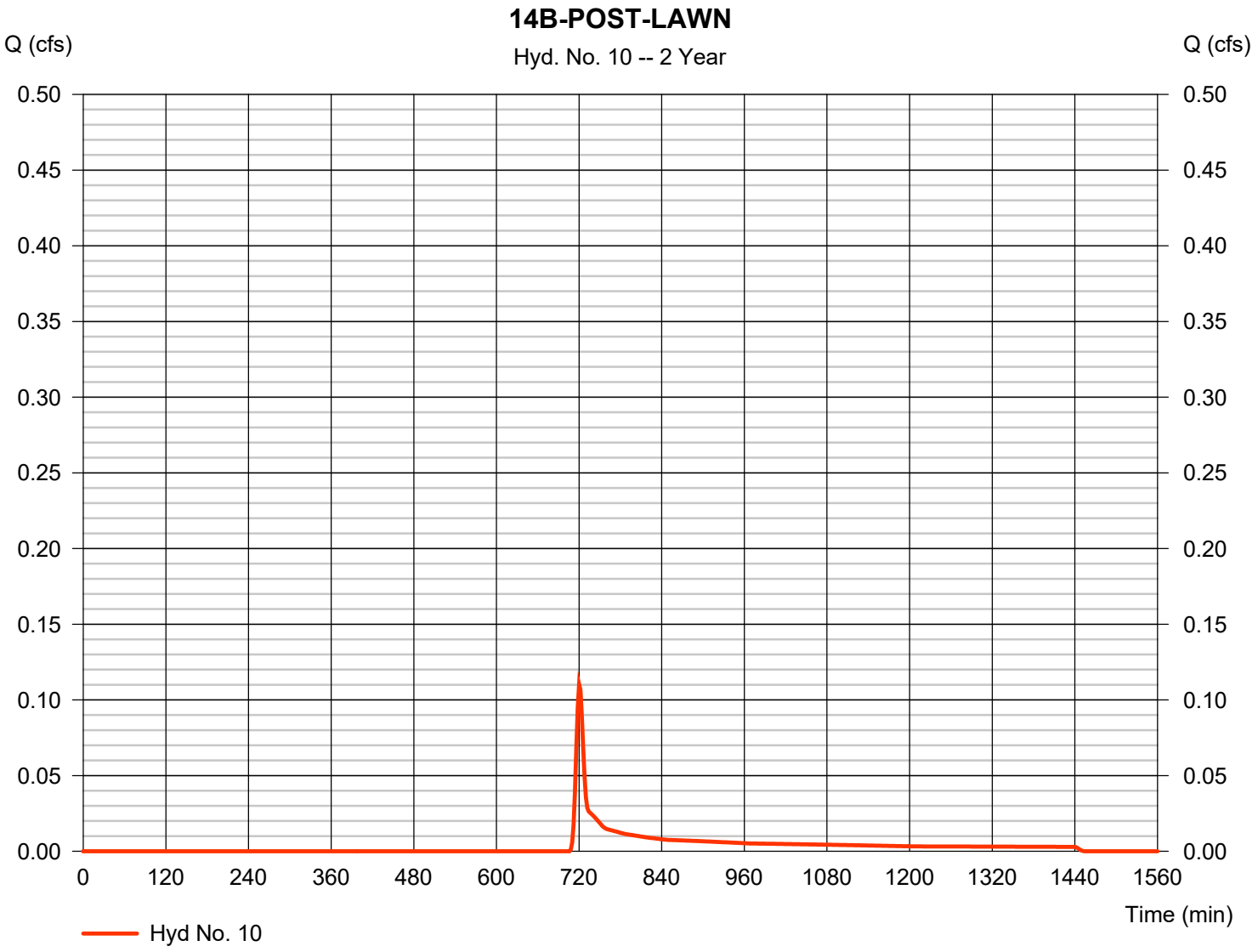
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 10

14B-POST-LAWN

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.110 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	324 cuft
Drainage area	=	0.189 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



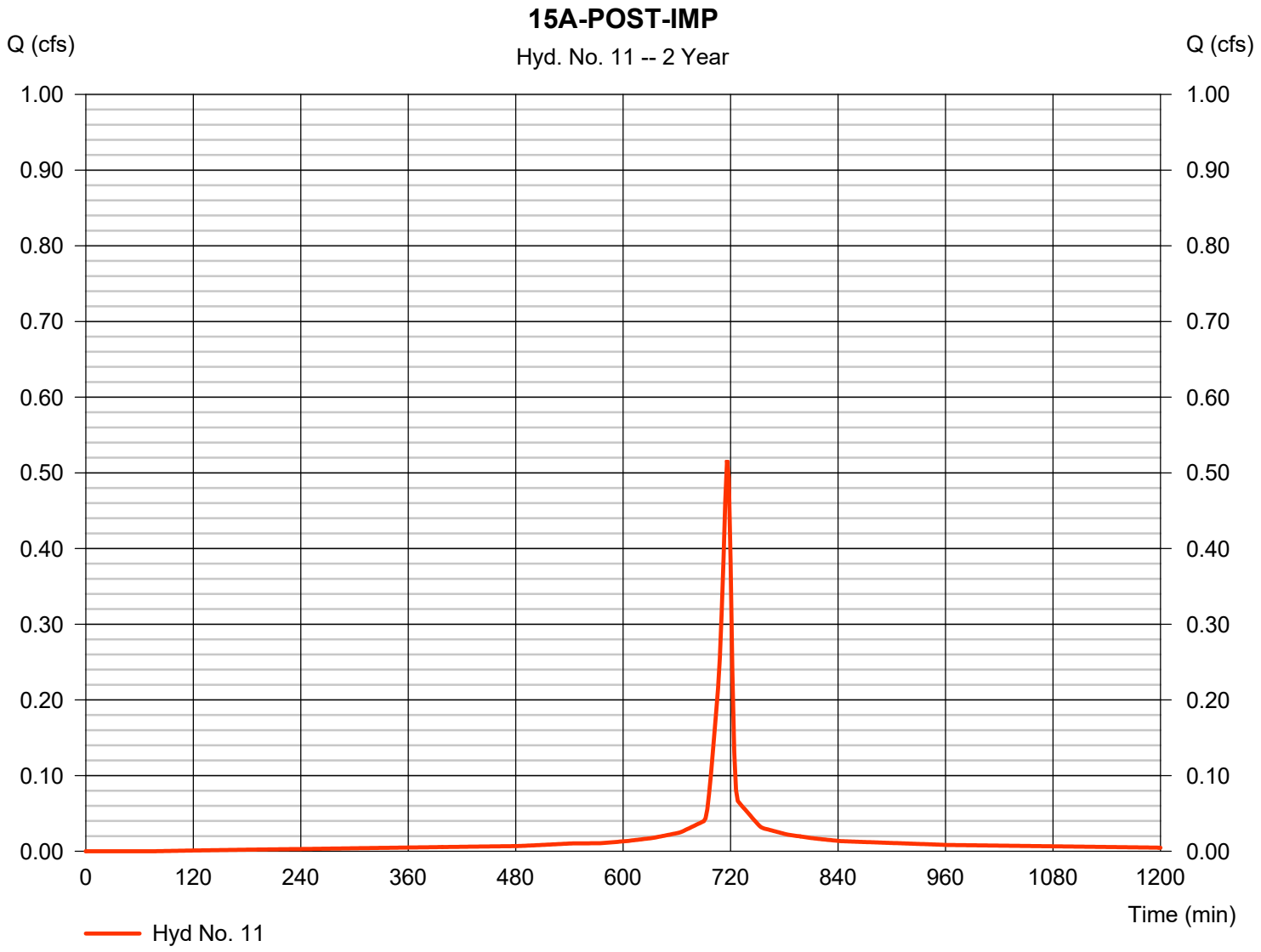
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 11

15A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.517 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,209 cuft
Drainage area	= 0.117 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



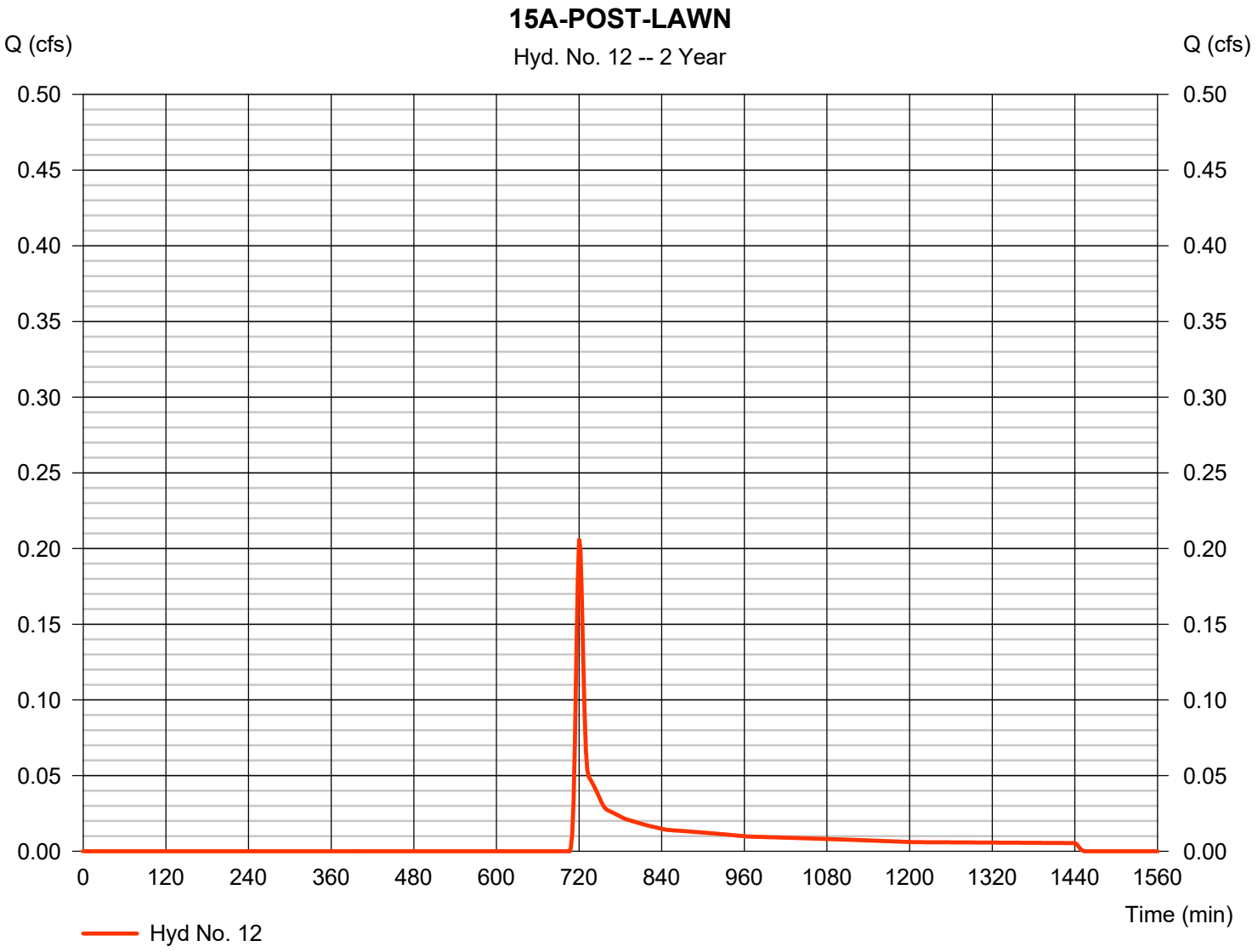
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 12

15A-POST-LAWN

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.206 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	608 cuft
Drainage area	=	0.354 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



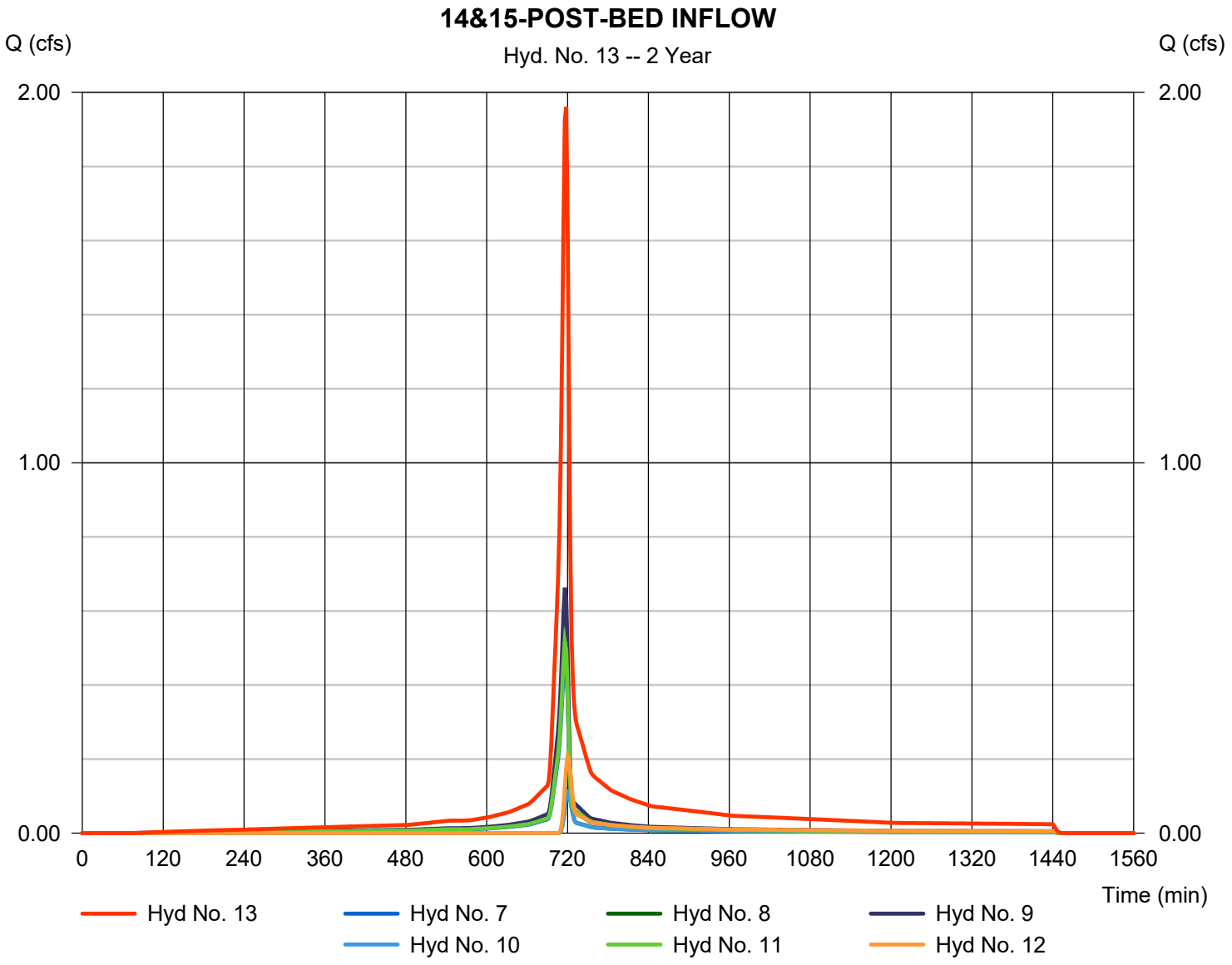
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 13

14&15-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	1.960 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	5,163 cuft
Inflow hyds.	=	7, 8, 9, 10, 11, 12	Contrib. drain. area	=	1.115 ac



Hydrograph Report

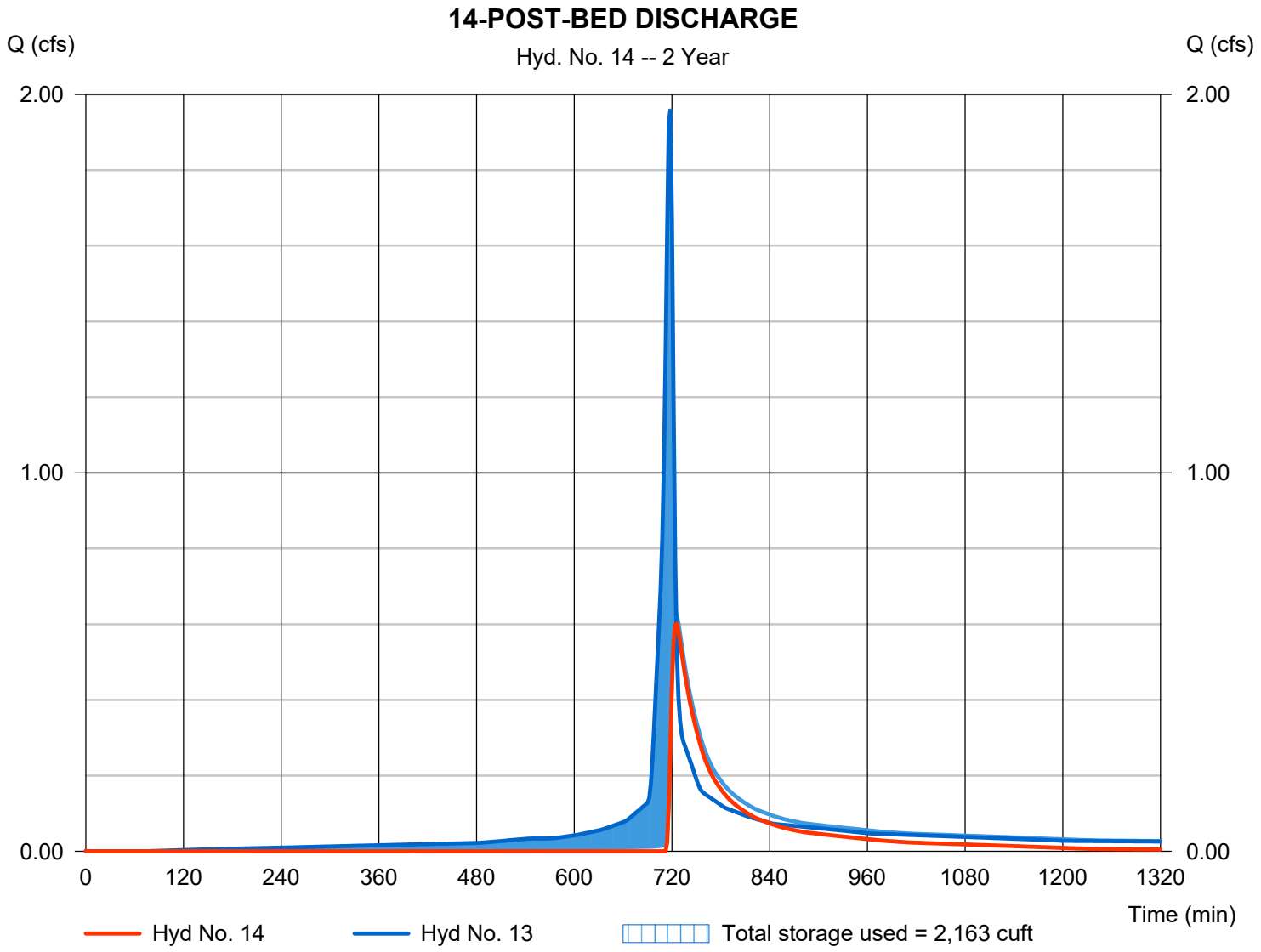
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 14

14-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.601 cfs
Storm frequency	=	2 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	2,413 cuft
Inflow hyd. No.	=	13 - 14&15-POST-BED INFLOW	Max. Elevation	=	387.46 ft
Reservoir name	=	LOT 14 INFILTRATION BED	Max. Storage	=	2,163 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 2 - LOT 14 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 386.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 75.00 ft, No. Barrels = 6, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	386.00	n/a	0	0
0.40	386.40	n/a	339	339
0.80	386.80	n/a	589	928
1.20	387.20	n/a	716	1,643
1.60	387.60	n/a	789	2,432
2.00	388.00	n/a	824	3,256
2.40	388.40	n/a	824	4,080
2.80	388.80	n/a	788	4,868
3.20	389.20	n/a	716	5,584
3.60	389.60	n/a	588	6,172
4.00	390.00	n/a	338	6,511

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 387.00	0.00	0.00	0.00
Length (ft)	= 27.70	0.00	0.00	0.00
Slope (%)	= 7.60	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

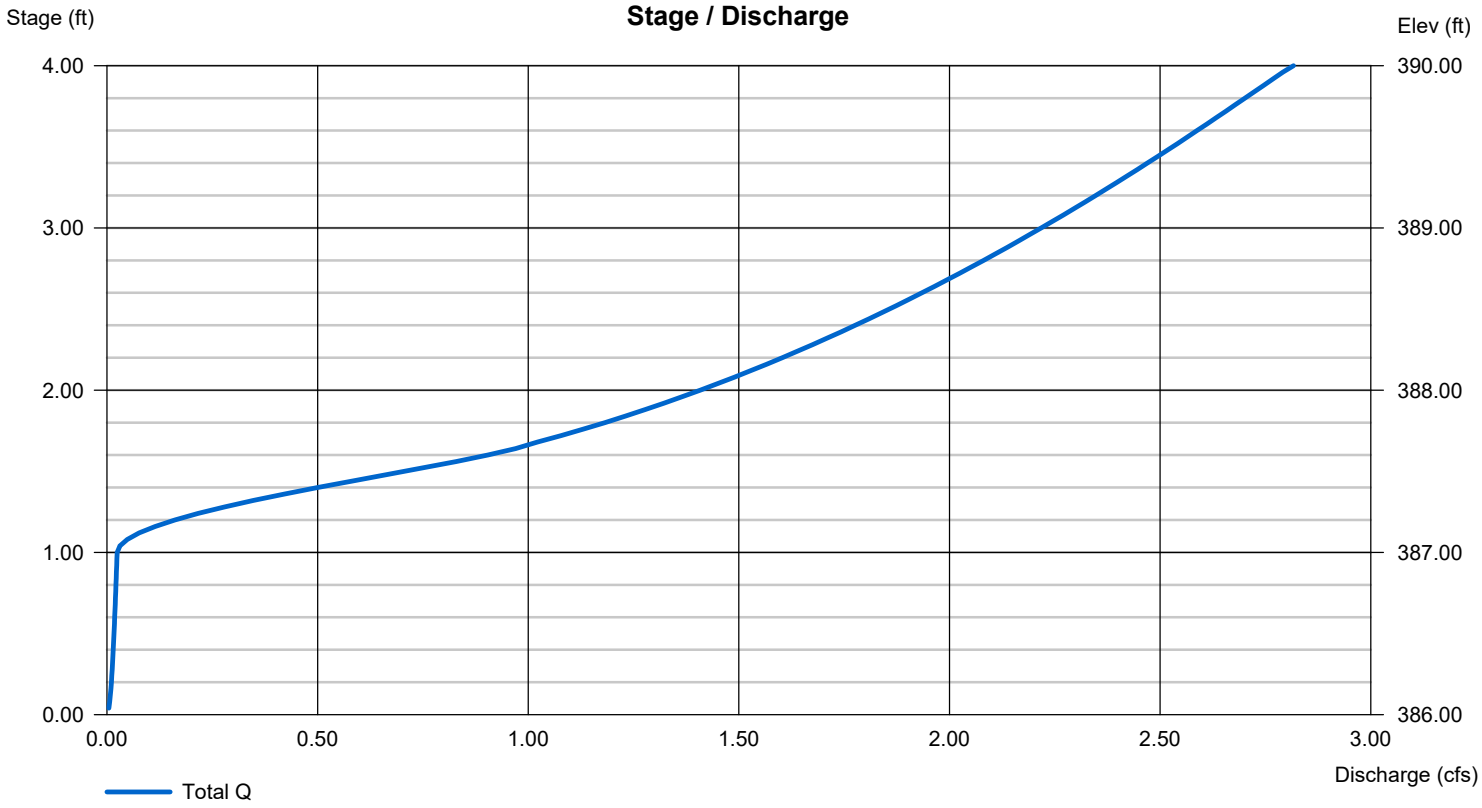
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.480 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



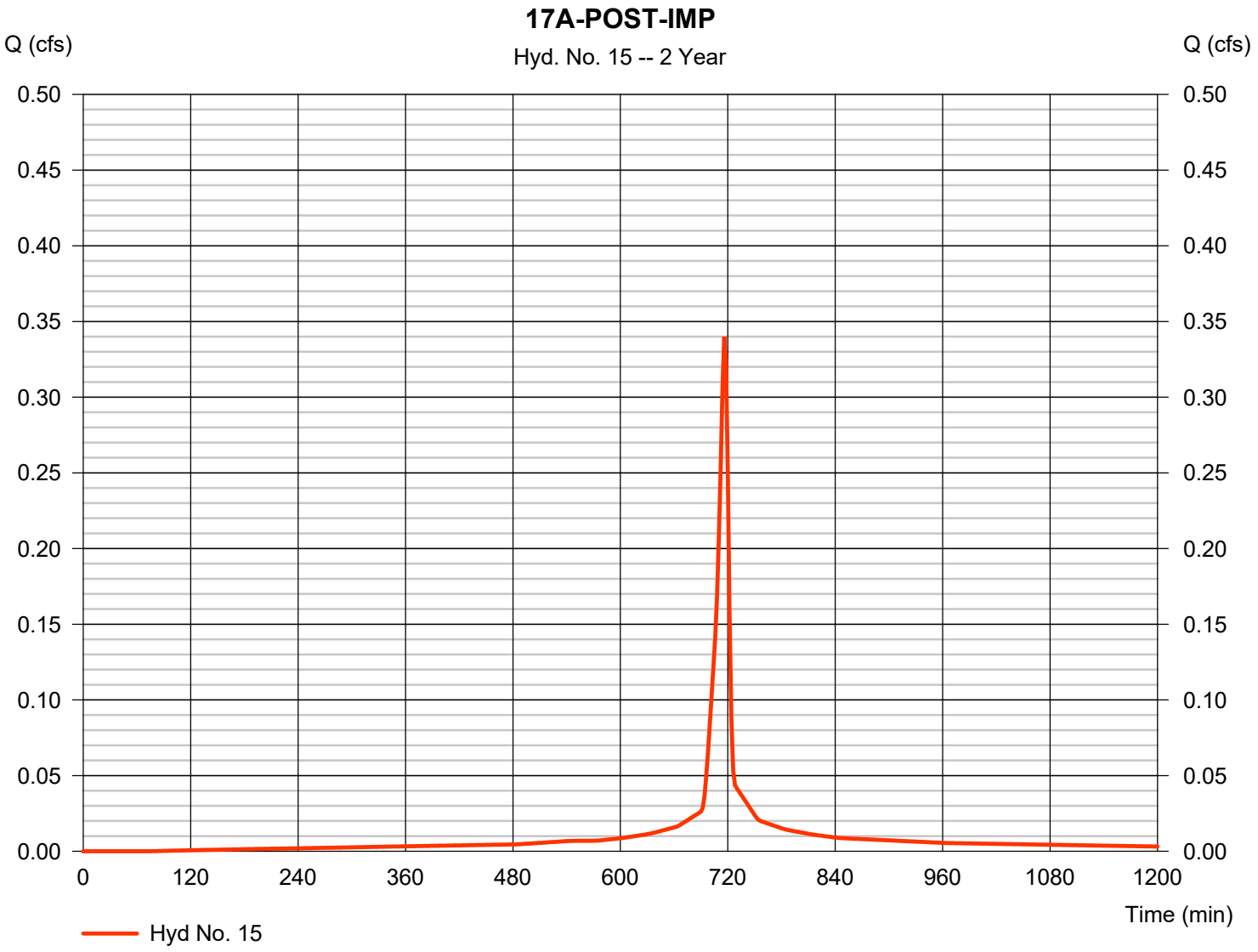
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 15

17A-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.340 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	796 cuft
Drainage area	=	0.077 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



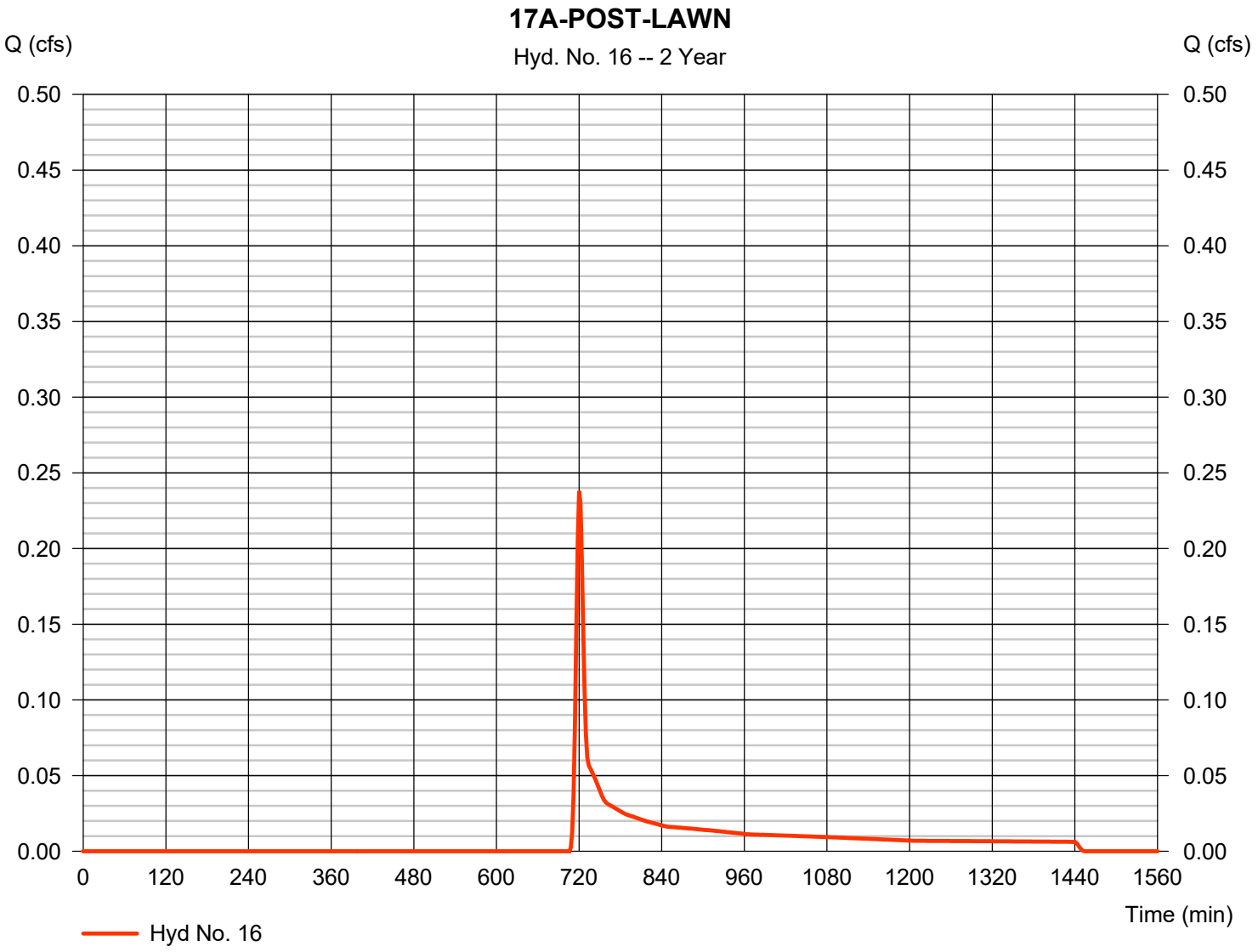
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 16

17A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.238 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 700 cuft
Drainage area	= 0.408 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



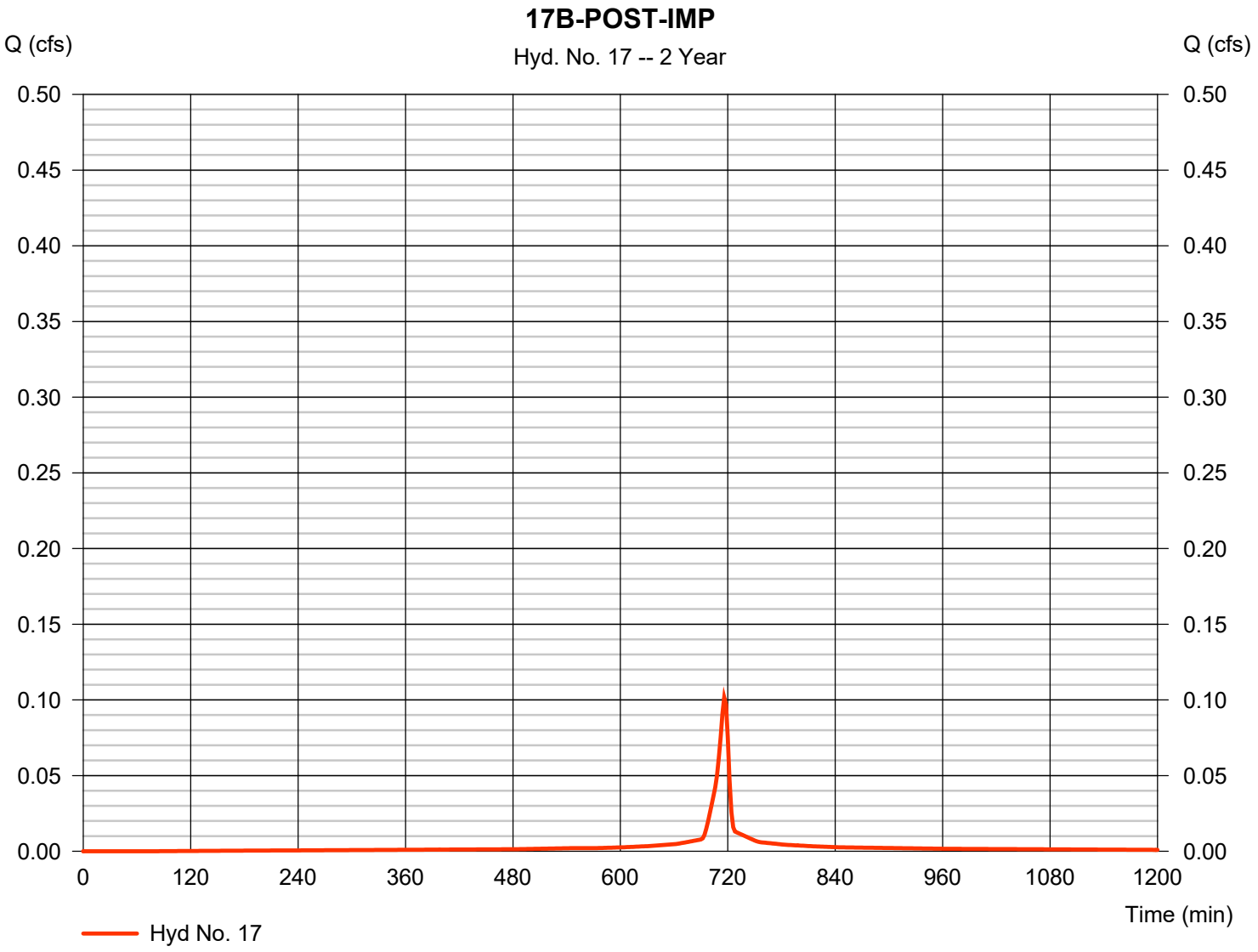
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 17

17B-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.102 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	238 cuft
Drainage area	=	0.023 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



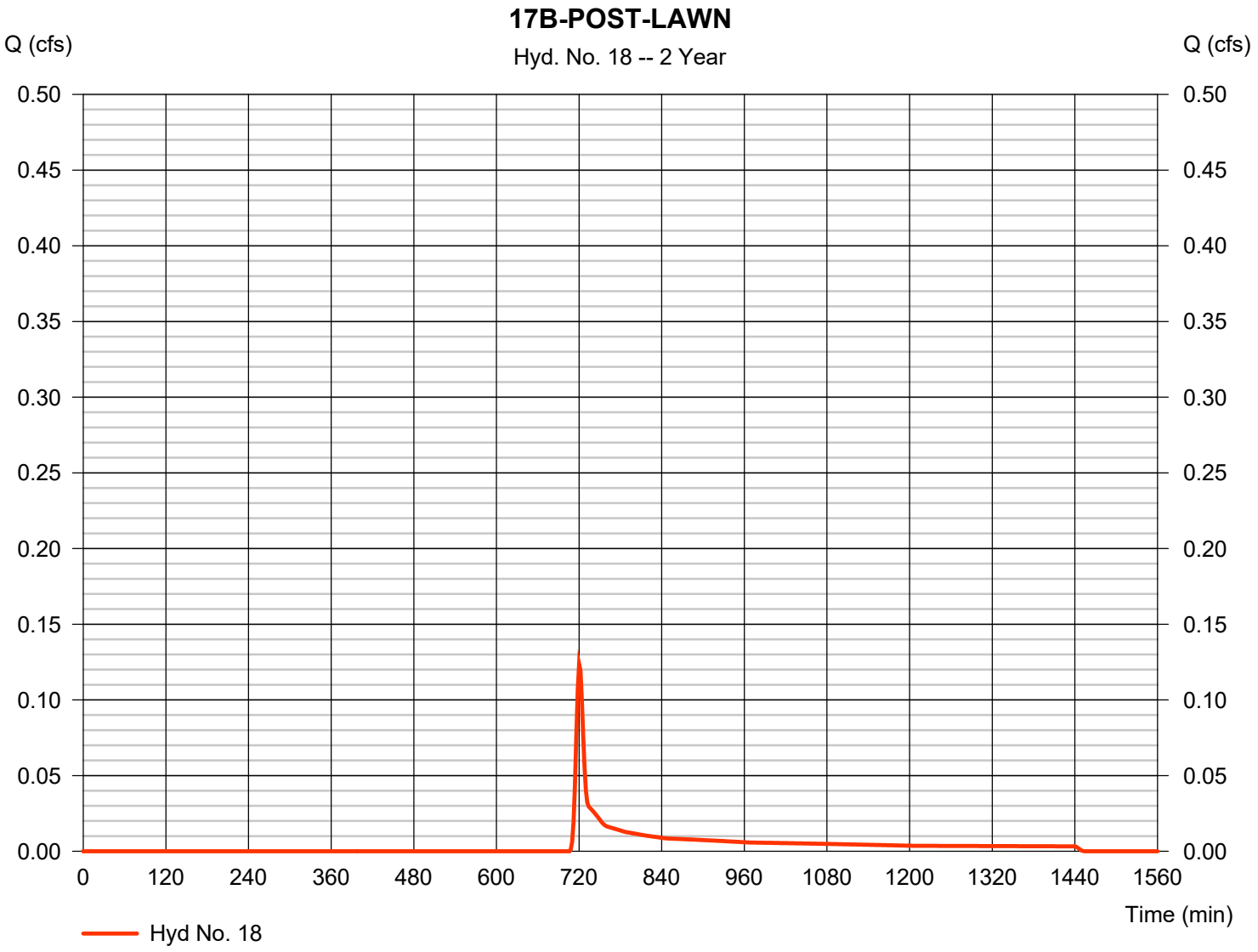
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 18

17B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.124 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 364 cuft
Drainage area	= 0.212 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



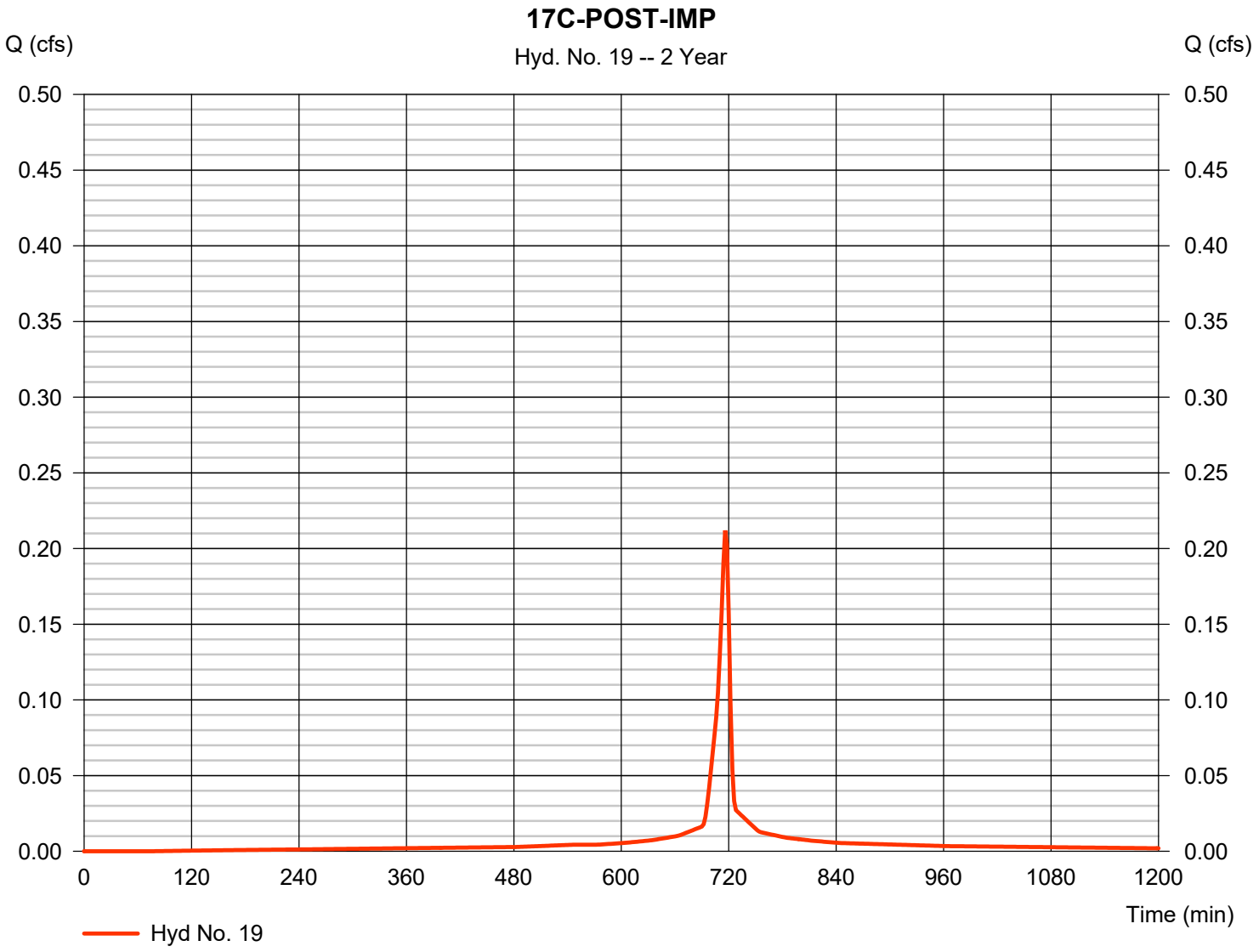
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 19

17C-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.212 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	496 cuft
Drainage area	=	0.048 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



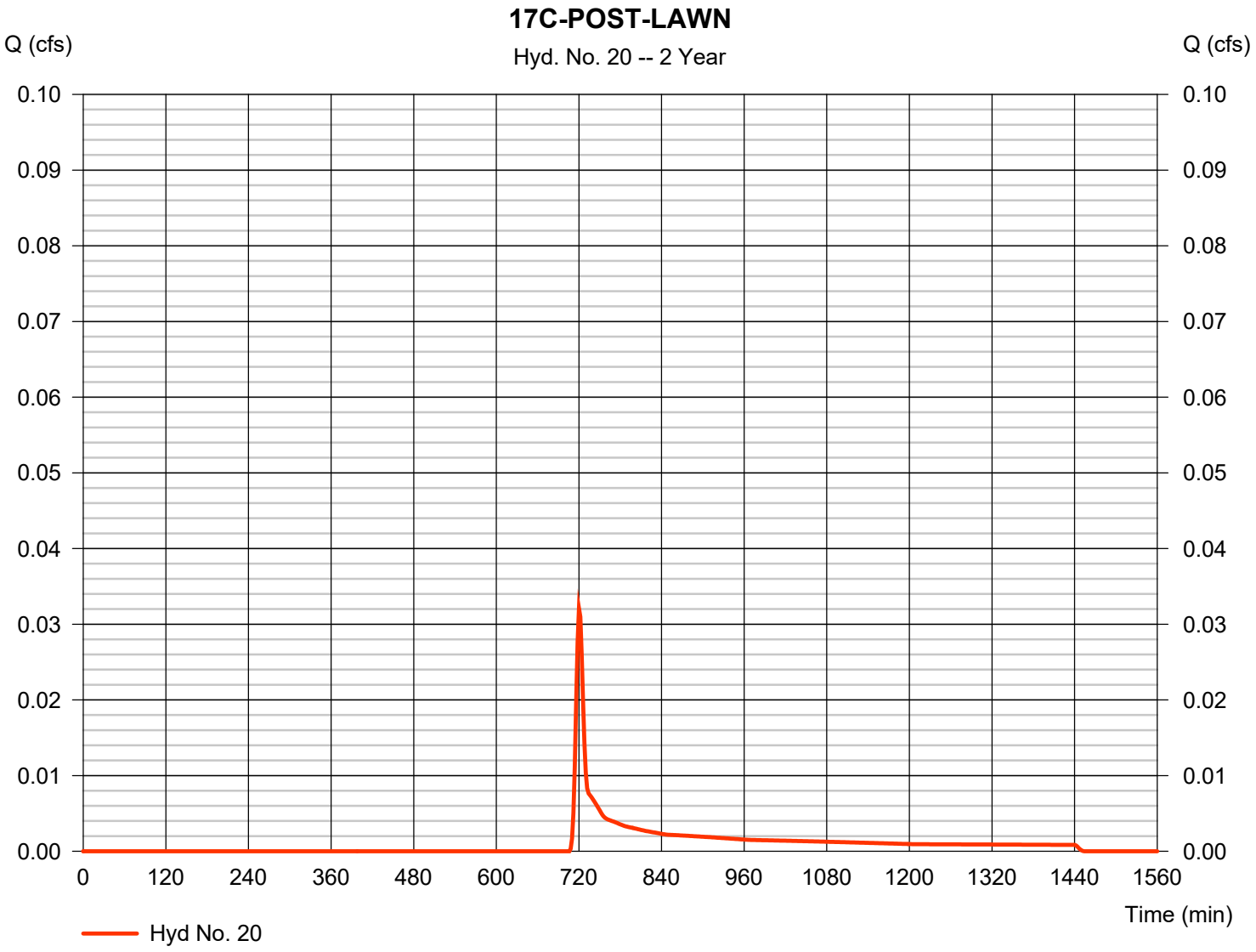
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 20

17C-POST-LAWN

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.032 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	94 cuft
Drainage area	=	0.055 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



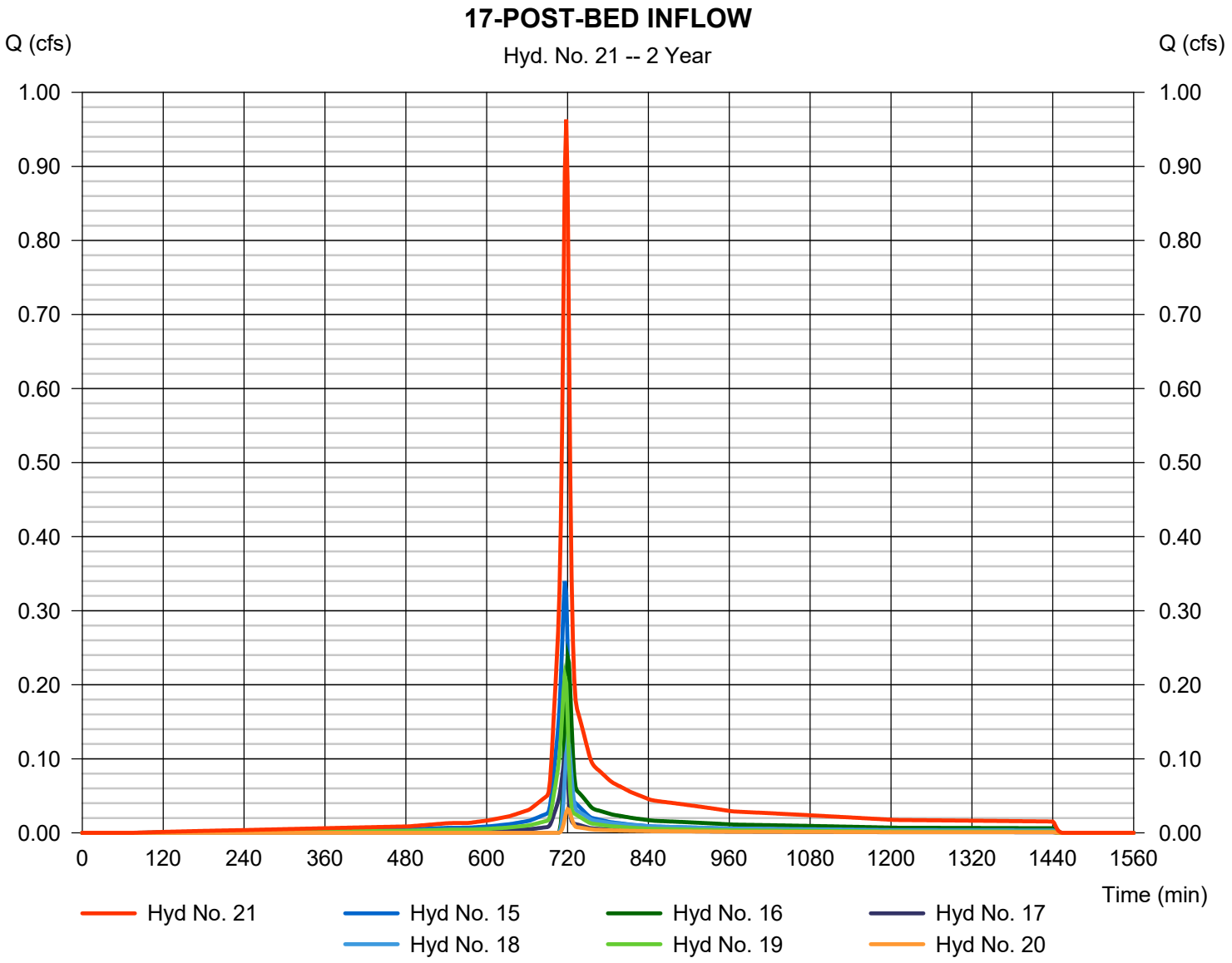
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 21

17-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	0.963 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,688 cuft
Inflow hyds.	=	15, 16, 17, 18, 19, 20	Contrib. drain. area	=	0.823 ac



Hydrograph Report

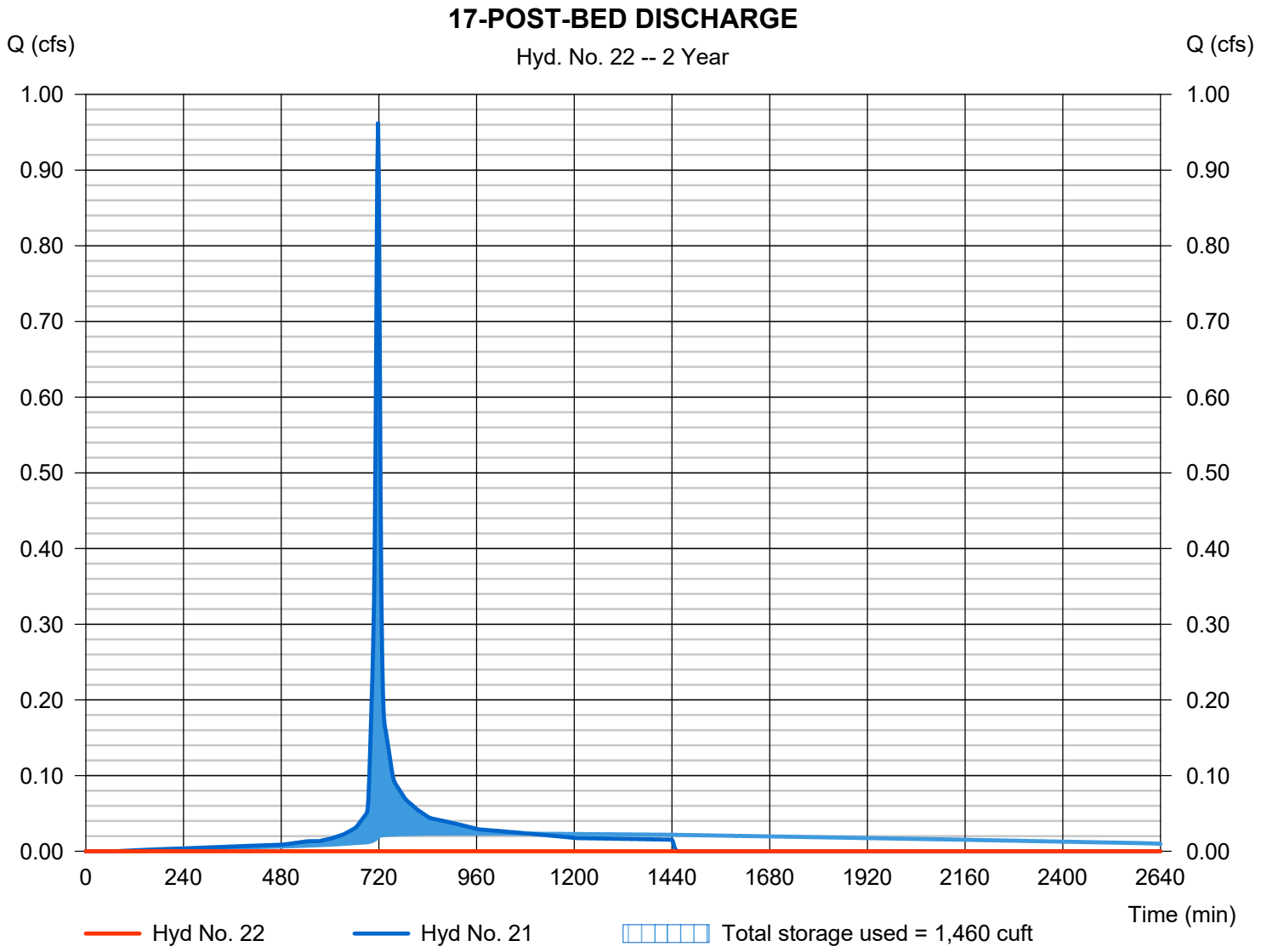
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 22

17-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	326 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	21 - 17-POST-BED INFLOW	Max. Elevation	=	405.41 ft
Reservoir name	=	LOT 17 INFILTRATION BED	Max. Storage	=	1,460 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 3 - LOT 17 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 404.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 50.00 ft, No. Barrels = 6, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	404.00	n/a	0	0
0.40	404.40	n/a	241	241
0.80	404.80	n/a	418	659
1.20	405.20	n/a	509	1,168
1.60	405.60	n/a	560	1,728
2.00	406.00	n/a	585	2,313
2.40	406.40	n/a	585	2,898
2.80	406.80	n/a	560	3,459
3.20	407.20	n/a	508	3,967
3.60	407.60	n/a	418	4,385
4.00	408.00	n/a	240	4,625

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 406.50	0.00	0.00	0.00
Length (ft)	= 135.70	0.00	0.00	0.00
Slope (%)	= 4.60	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

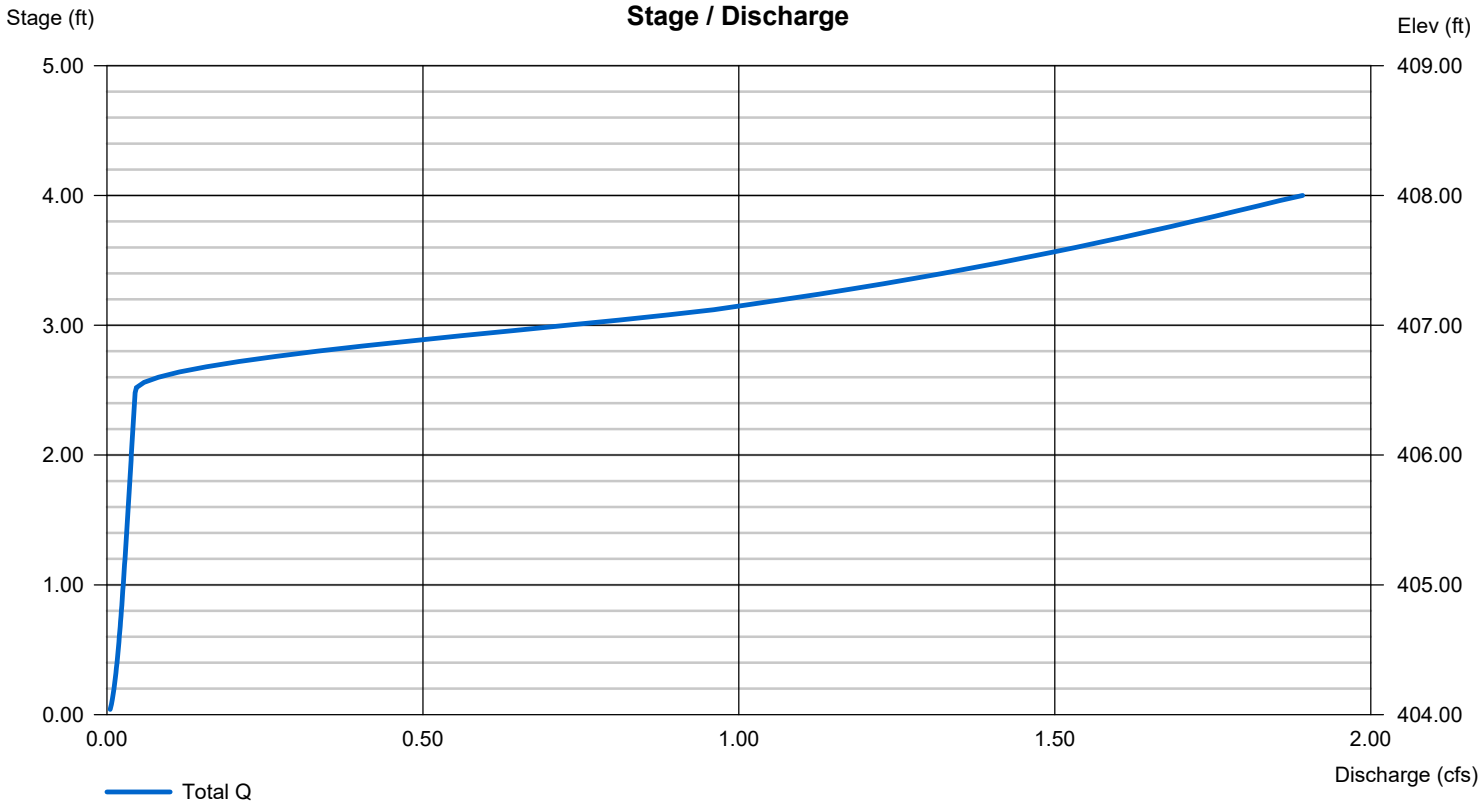
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.720 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



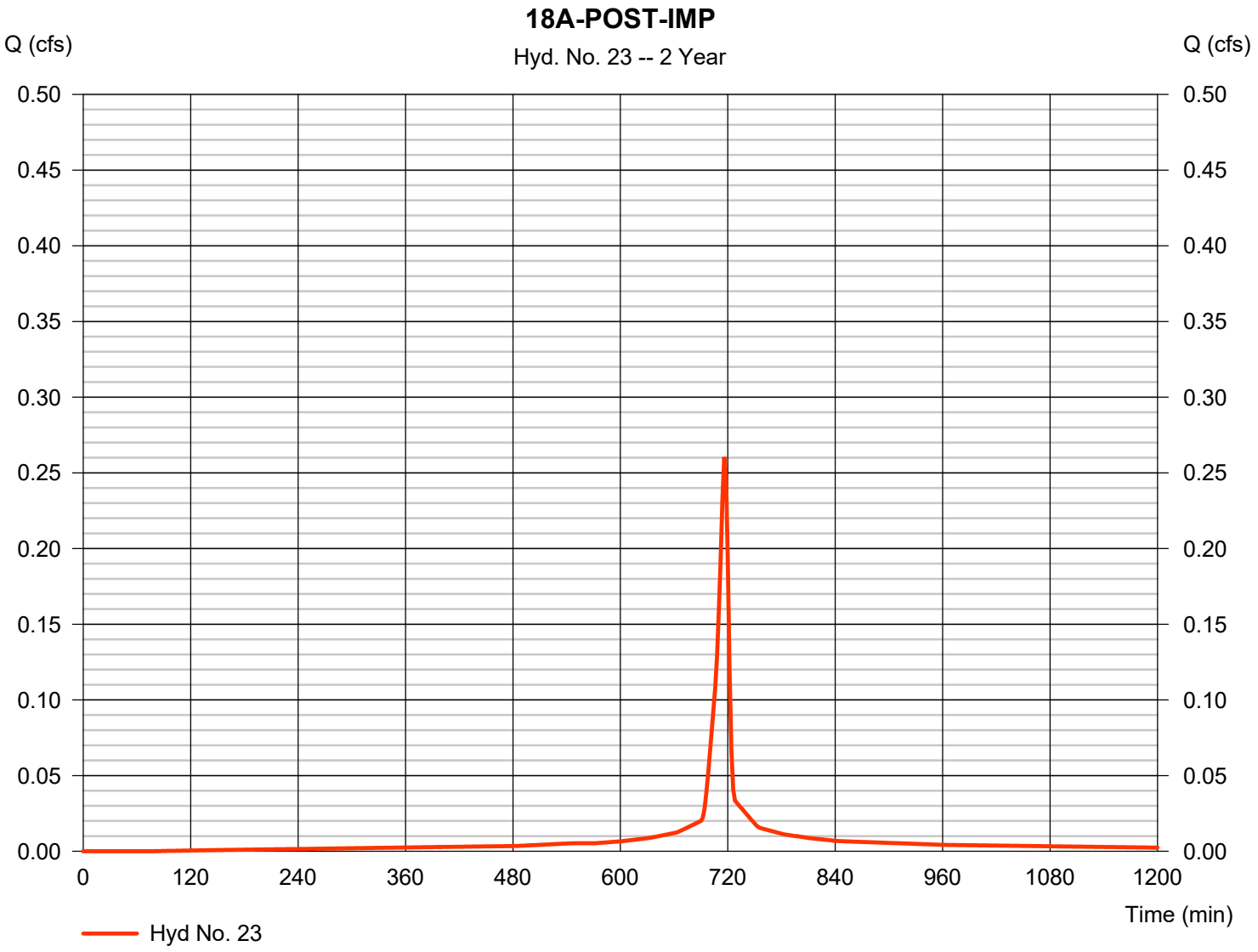
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 23

18A-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.260 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	610 cuft
Drainage area	=	0.059 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



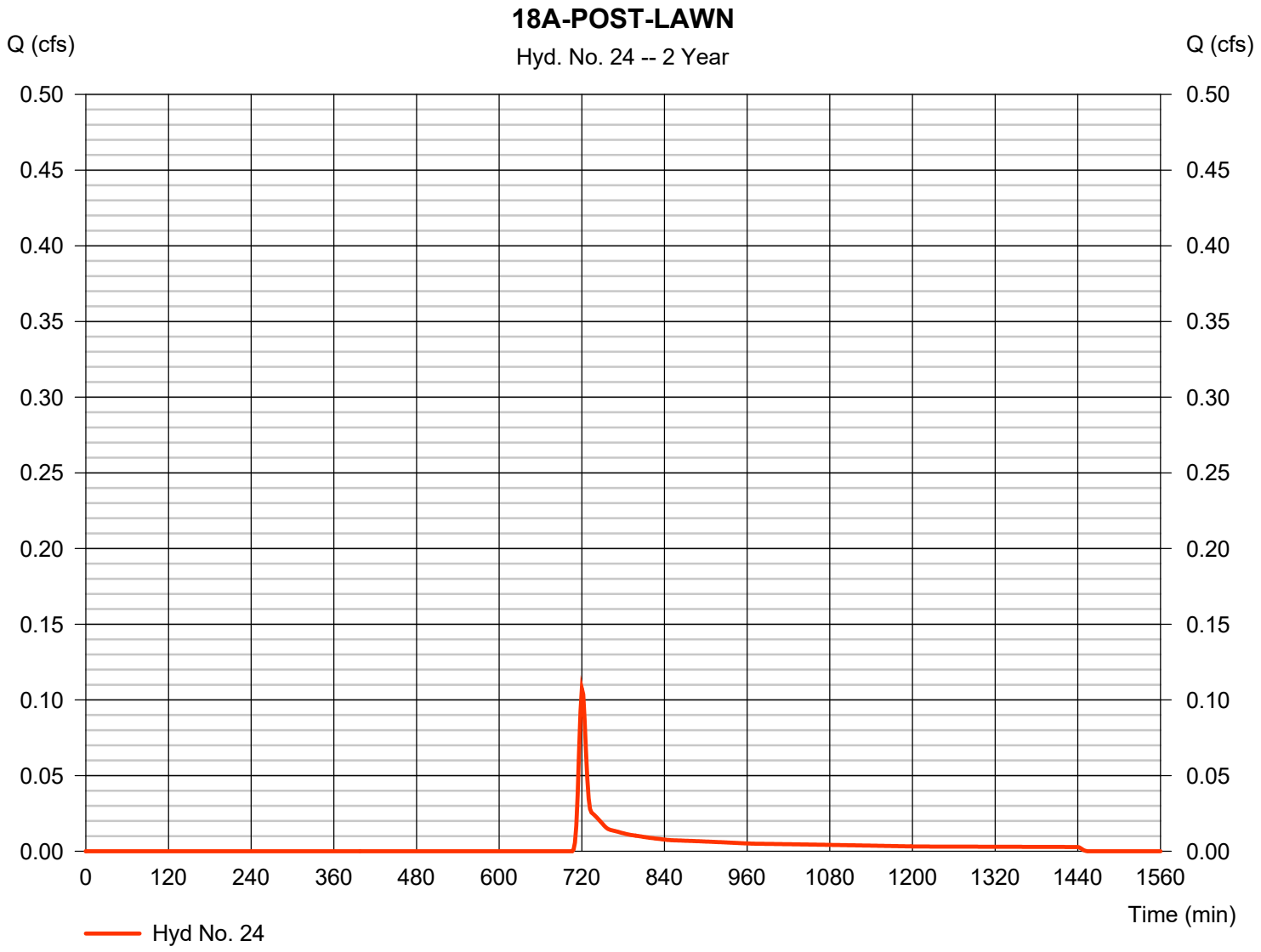
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 24

18A-POST-LAWN

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.107 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	316 cuft
Drainage area	=	0.184 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



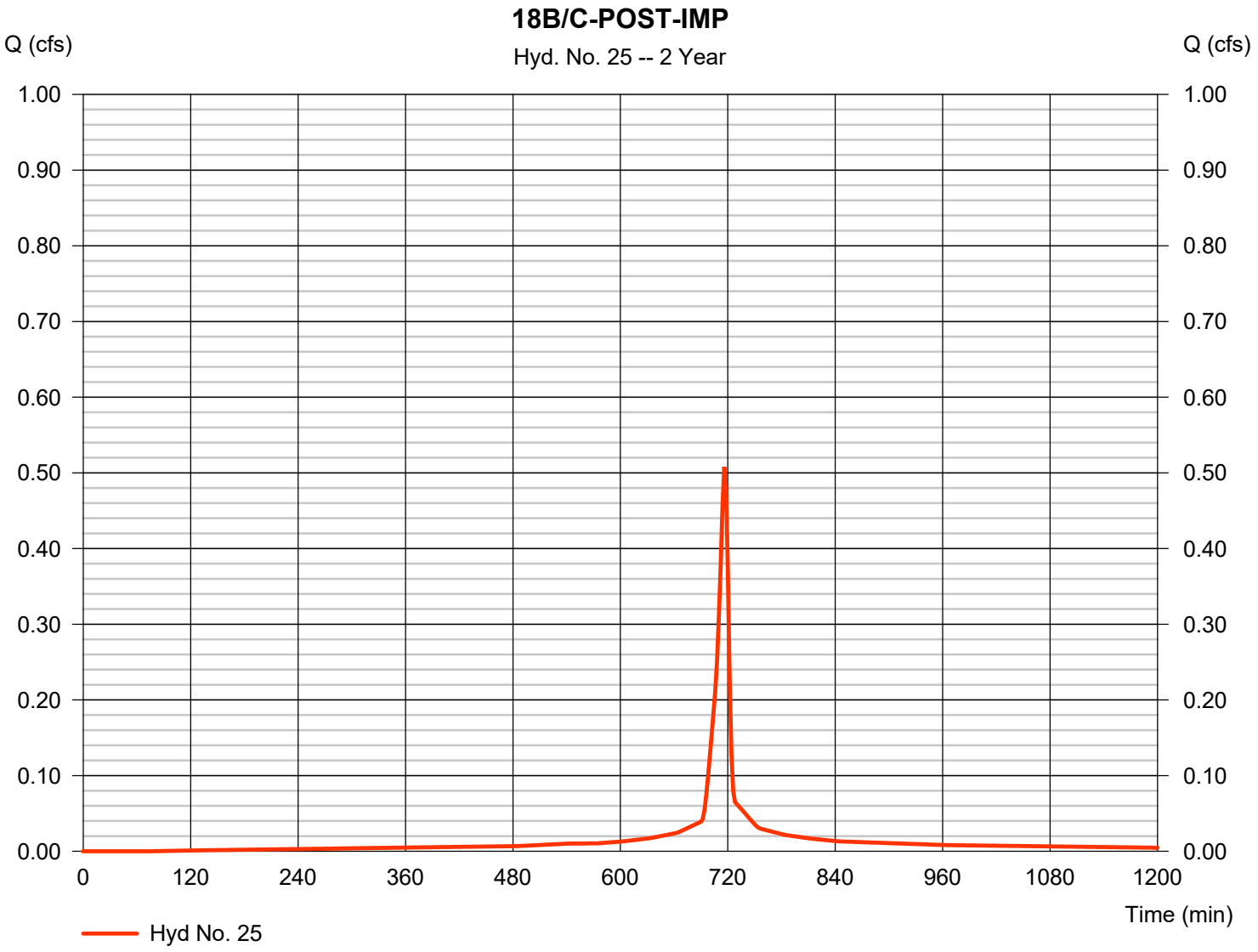
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 25

18B/C-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.508 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,189 cuft
Drainage area	= 0.115 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



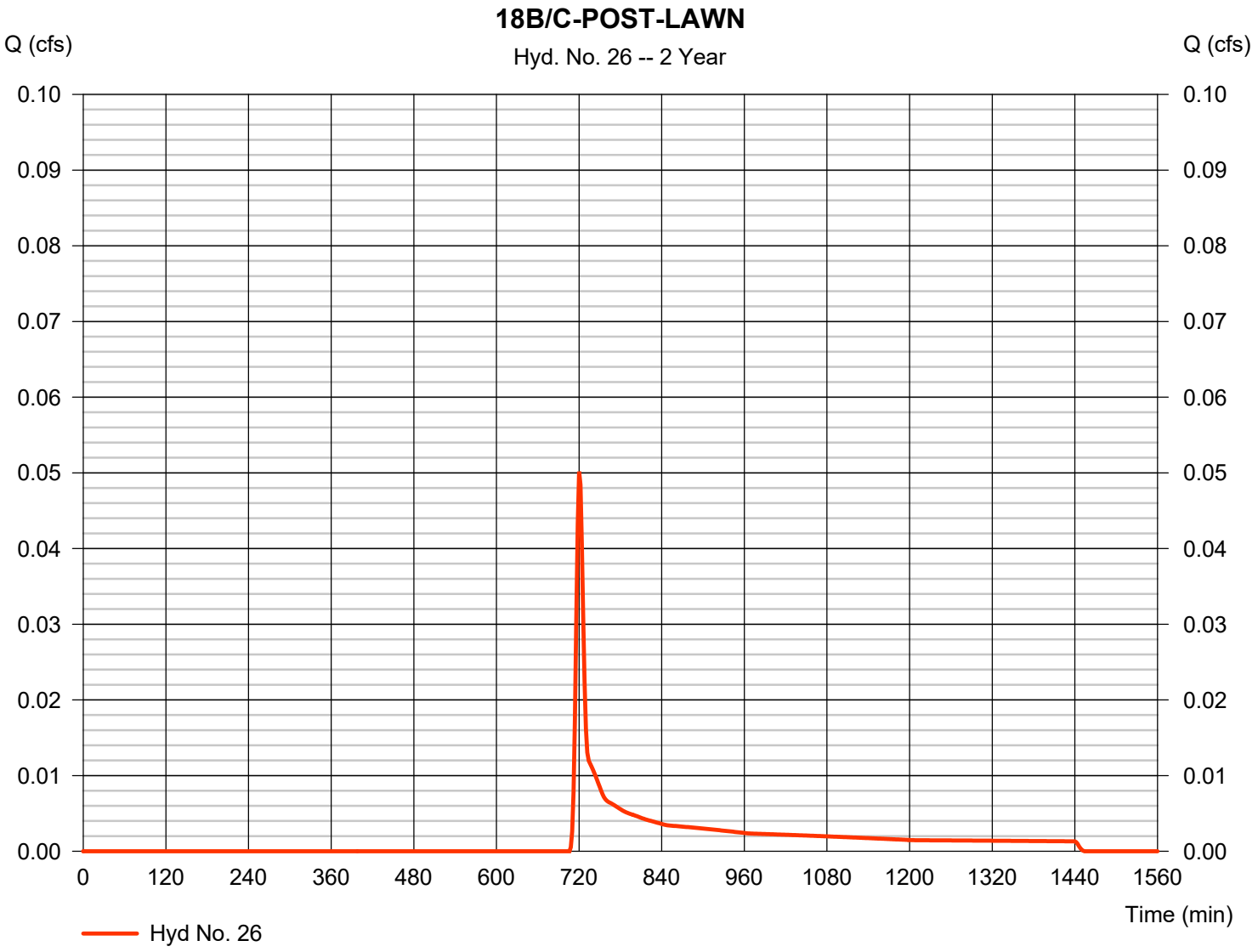
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 26

18B/C-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.050 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 148 cuft
Drainage area	= 0.086 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



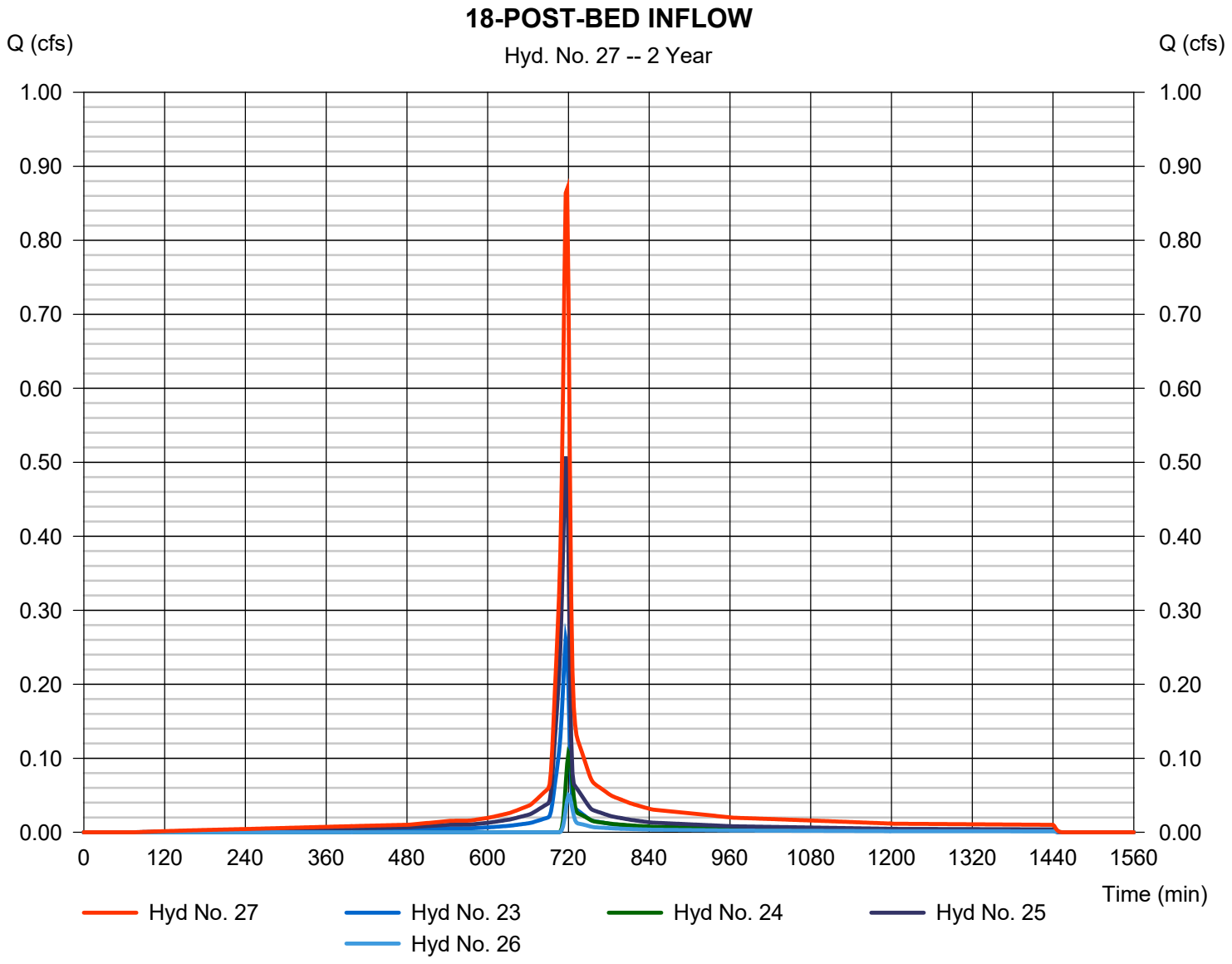
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 27

18-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.869 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,262 cuft
Inflow hyds.	= 23, 24, 25, 26	Contrib. drain. area	= 0.444 ac



Hydrograph Report

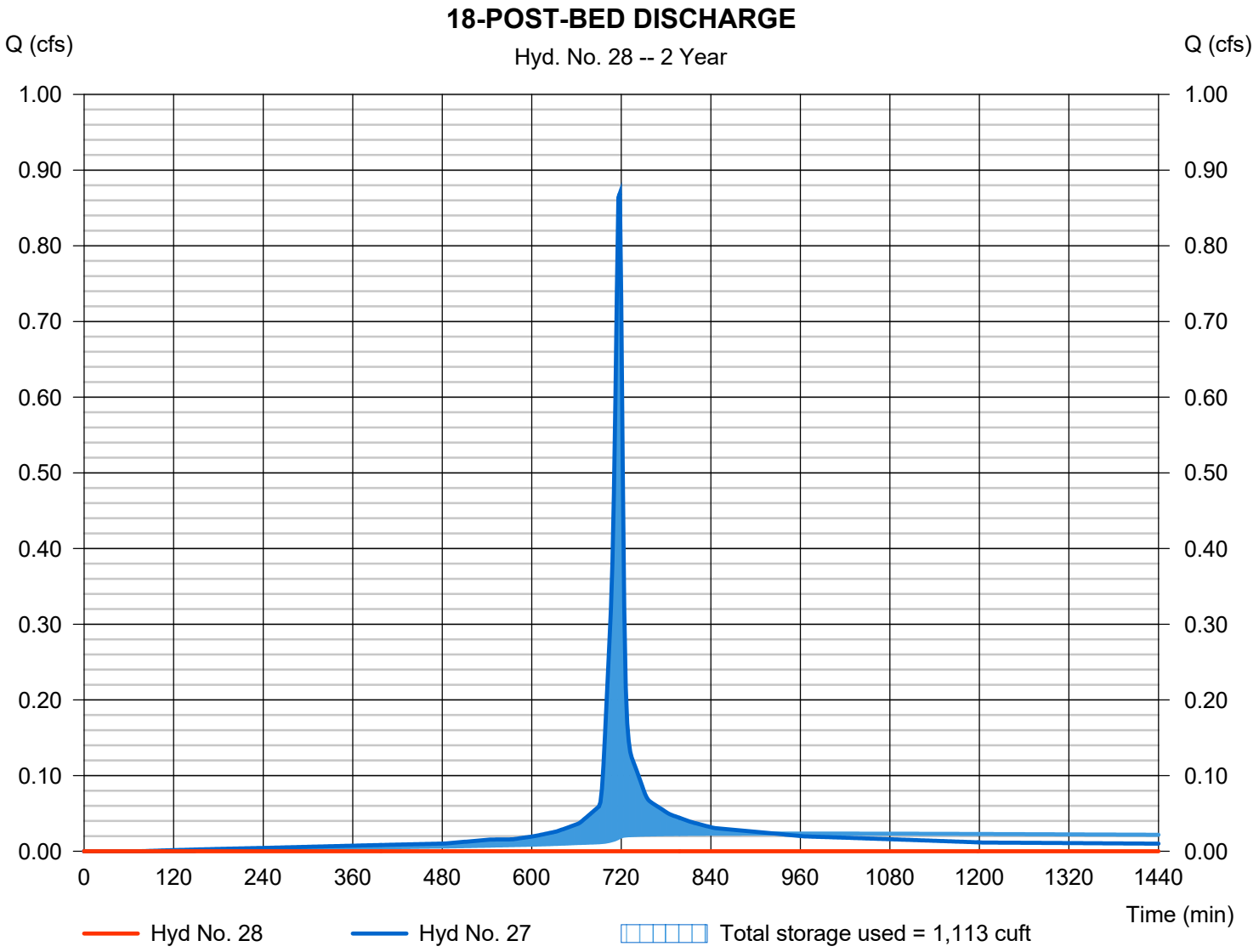
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 28

18-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	1292 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	27 - 18-POST-BED INFLOW	Max. Elevation	=	401.74 ft
Reservoir name	=	LOT 18 INFILTRATION BED	Max. Storage	=	1,113 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 4 - LOT 18 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 400.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	400.00	n/a	0	0
0.40	400.40	n/a	139	139
0.80	400.80	n/a	241	380
1.20	401.20	n/a	293	673
1.60	401.60	n/a	323	995
2.00	402.00	n/a	337	1,333
2.40	402.40	n/a	337	1,670
2.80	402.80	n/a	323	1,992
3.20	403.20	n/a	293	2,285
3.60	403.60	n/a	241	2,526
4.00	404.00	n/a	138	2,665

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 402.50	0.00	0.00	0.00
Length (ft)	= 47.00	0.00	0.00	0.00
Slope (%)	= 4.90	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

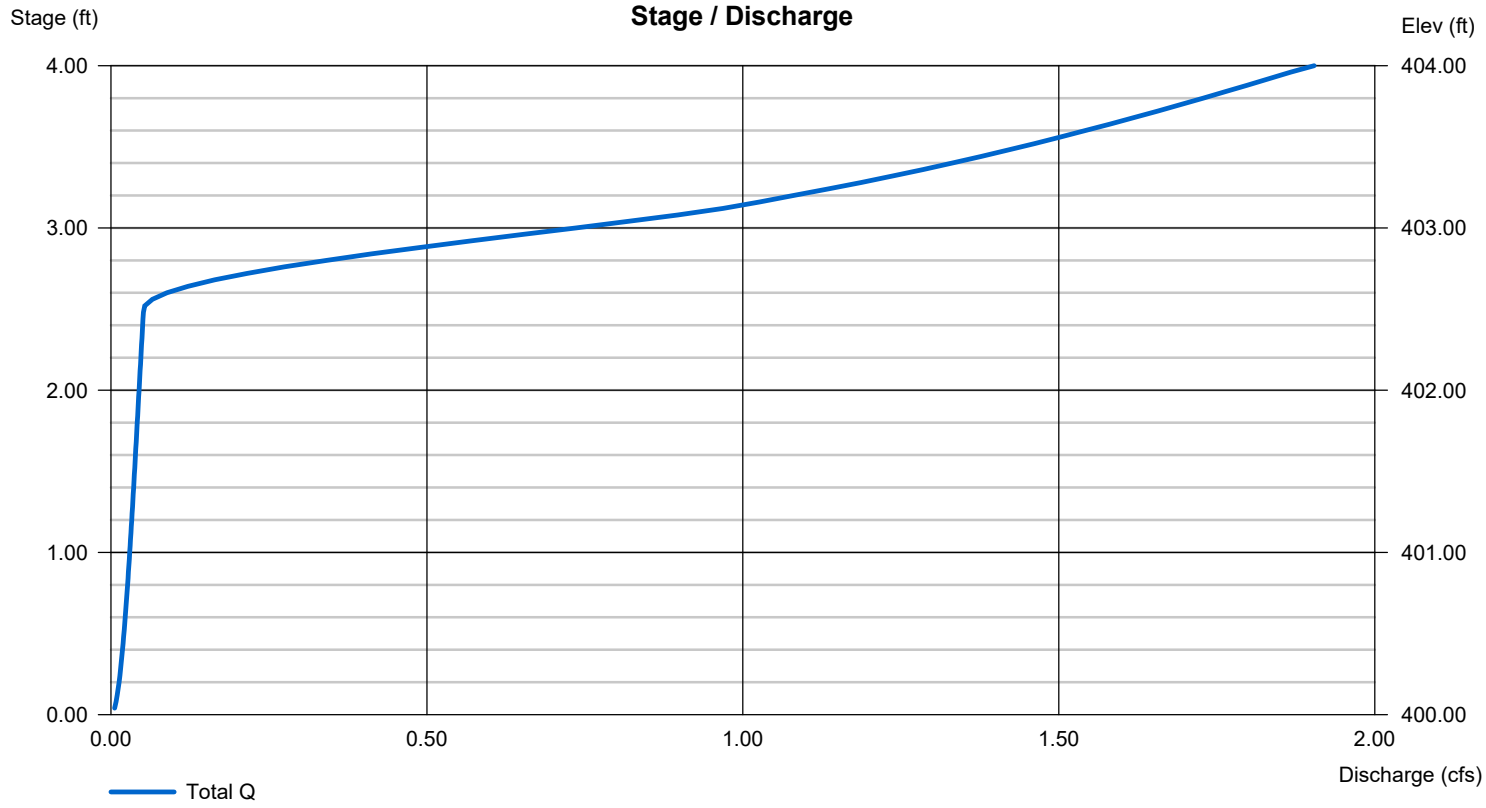
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.440 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



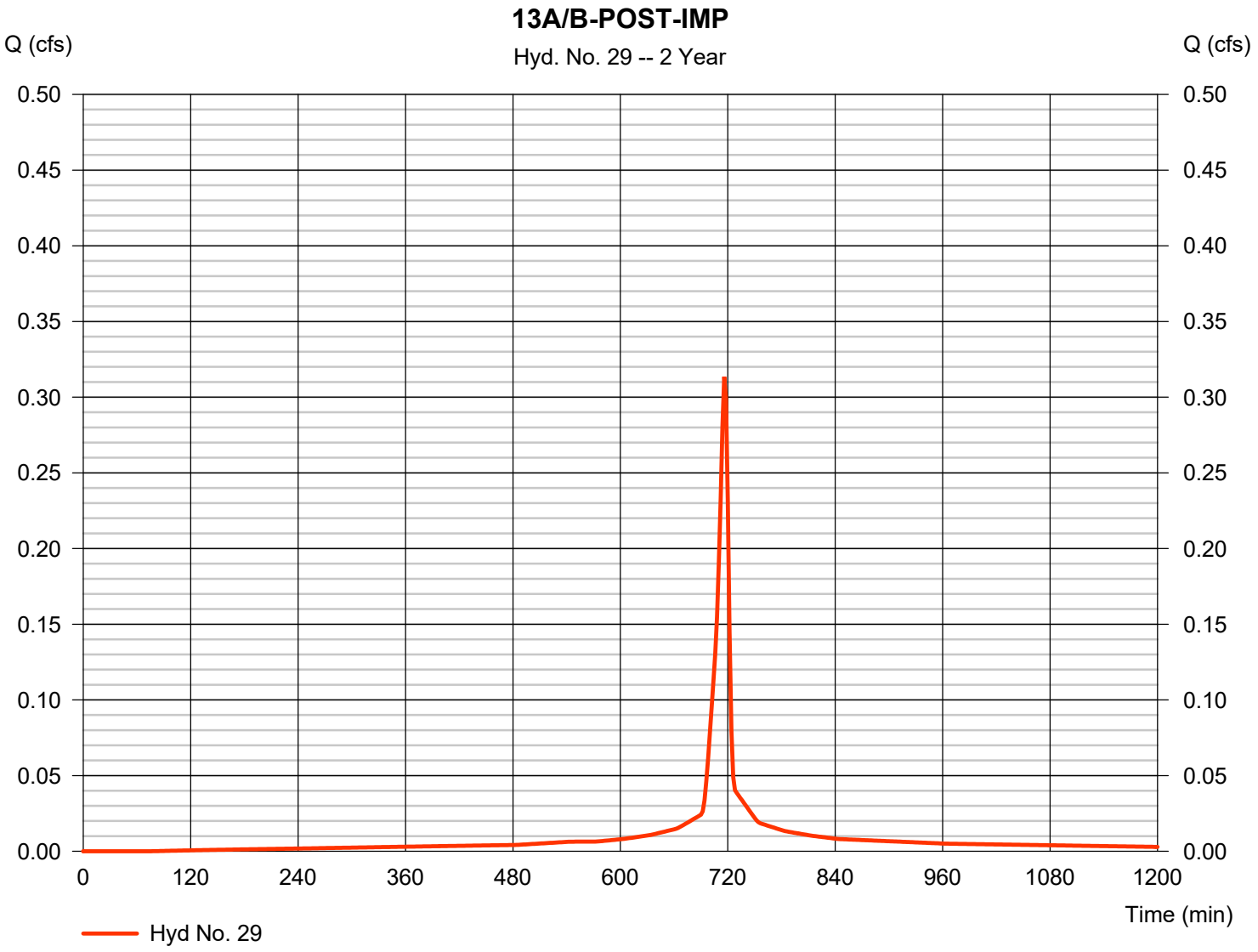
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 29

13A/B-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.313 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	734 cuft
Drainage area	=	0.071 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



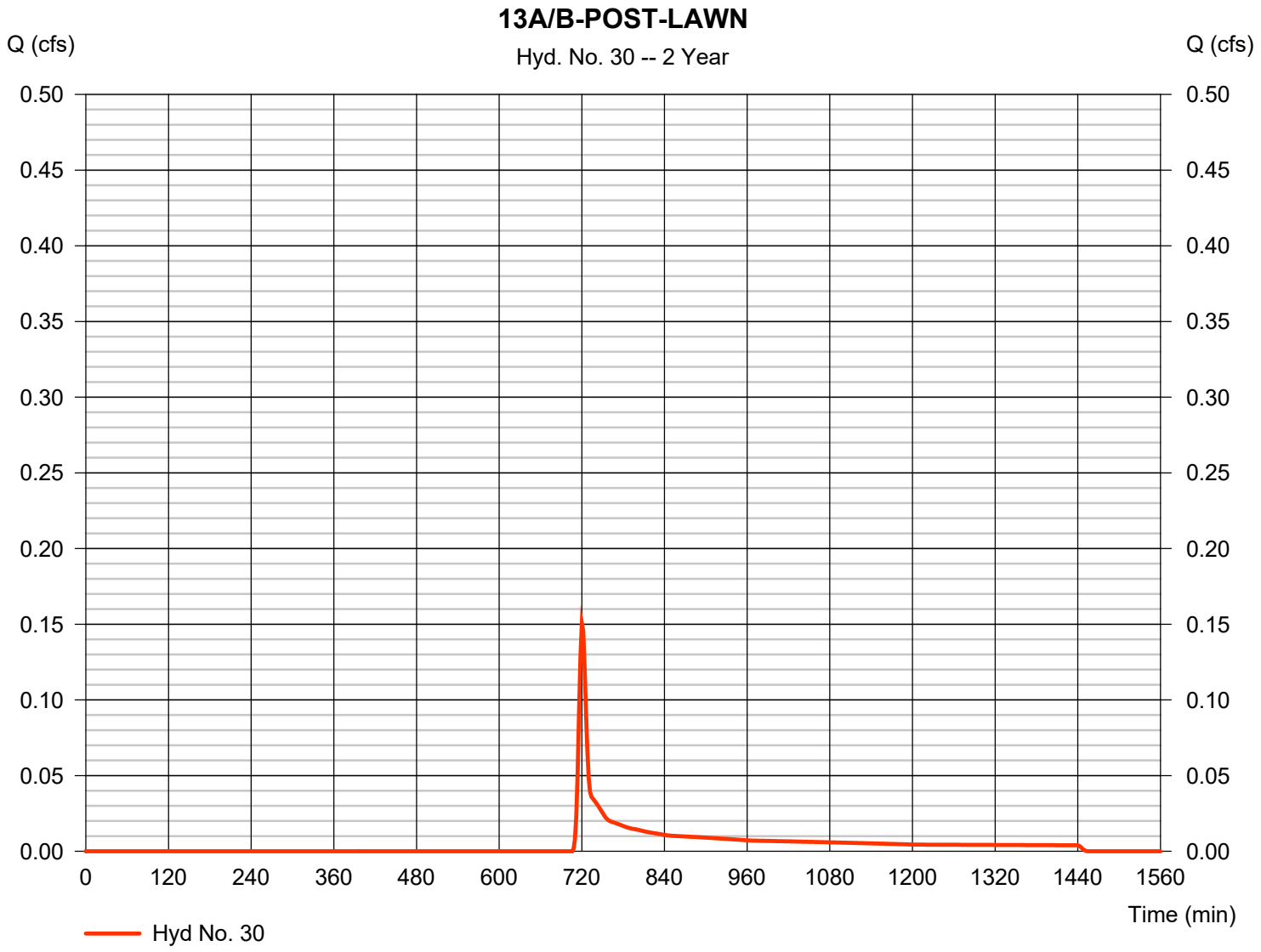
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 30

13A/B-POST-LAWN

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.150 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	443 cuft
Drainage area	=	0.258 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



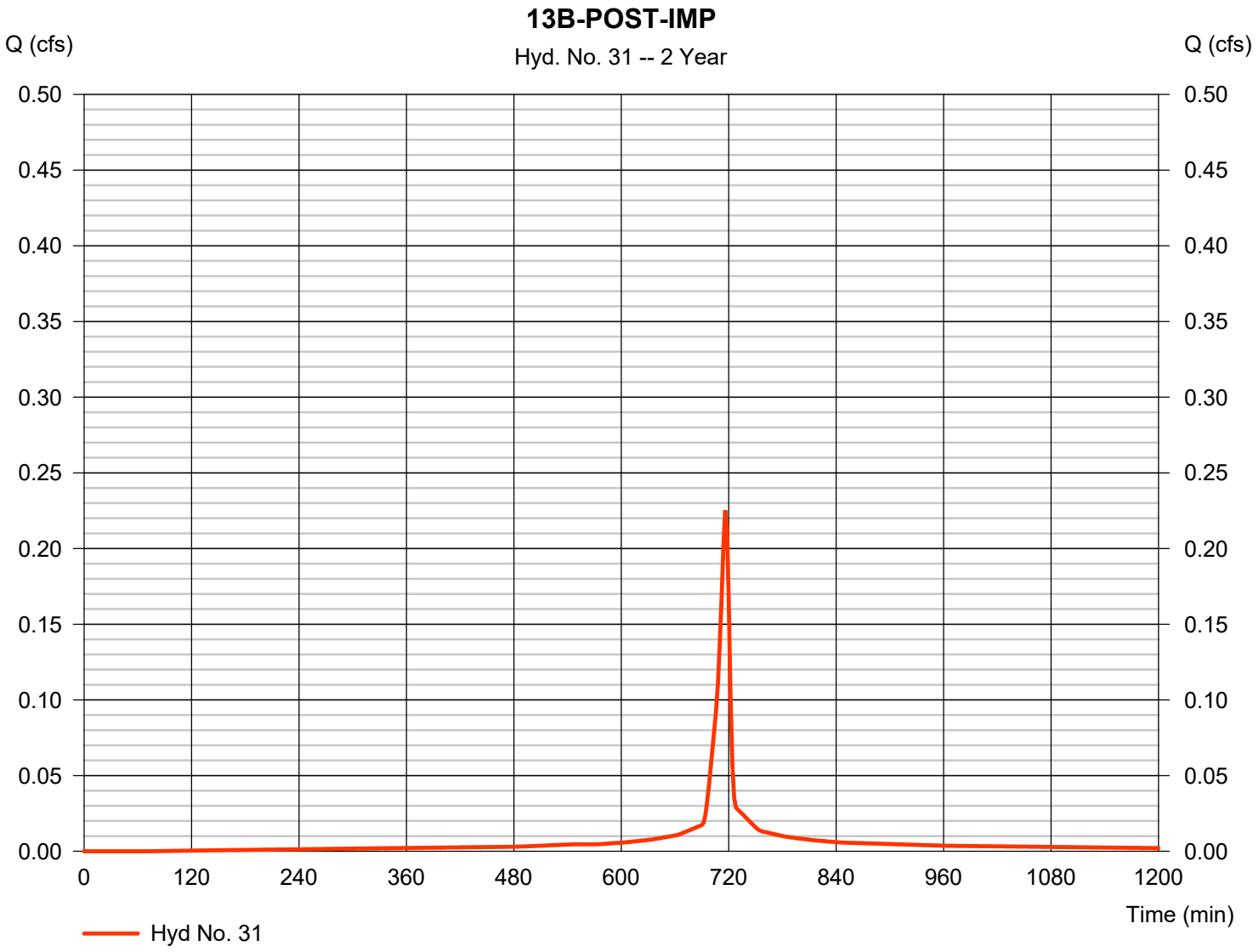
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 31

13B-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.225 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	527 cuft
Drainage area	=	0.051 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



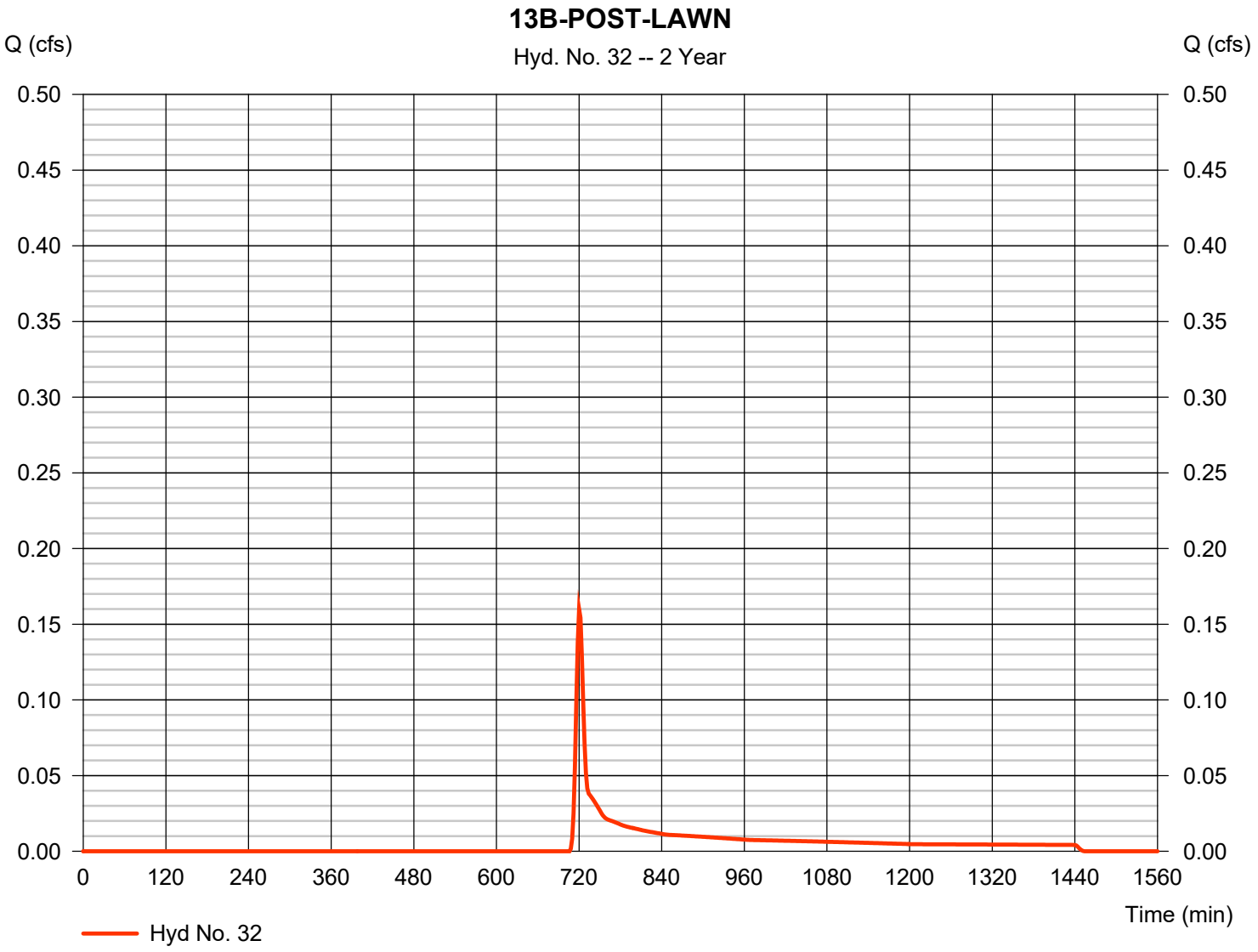
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 32

13B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.160 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 470 cuft
Drainage area	= 0.274 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



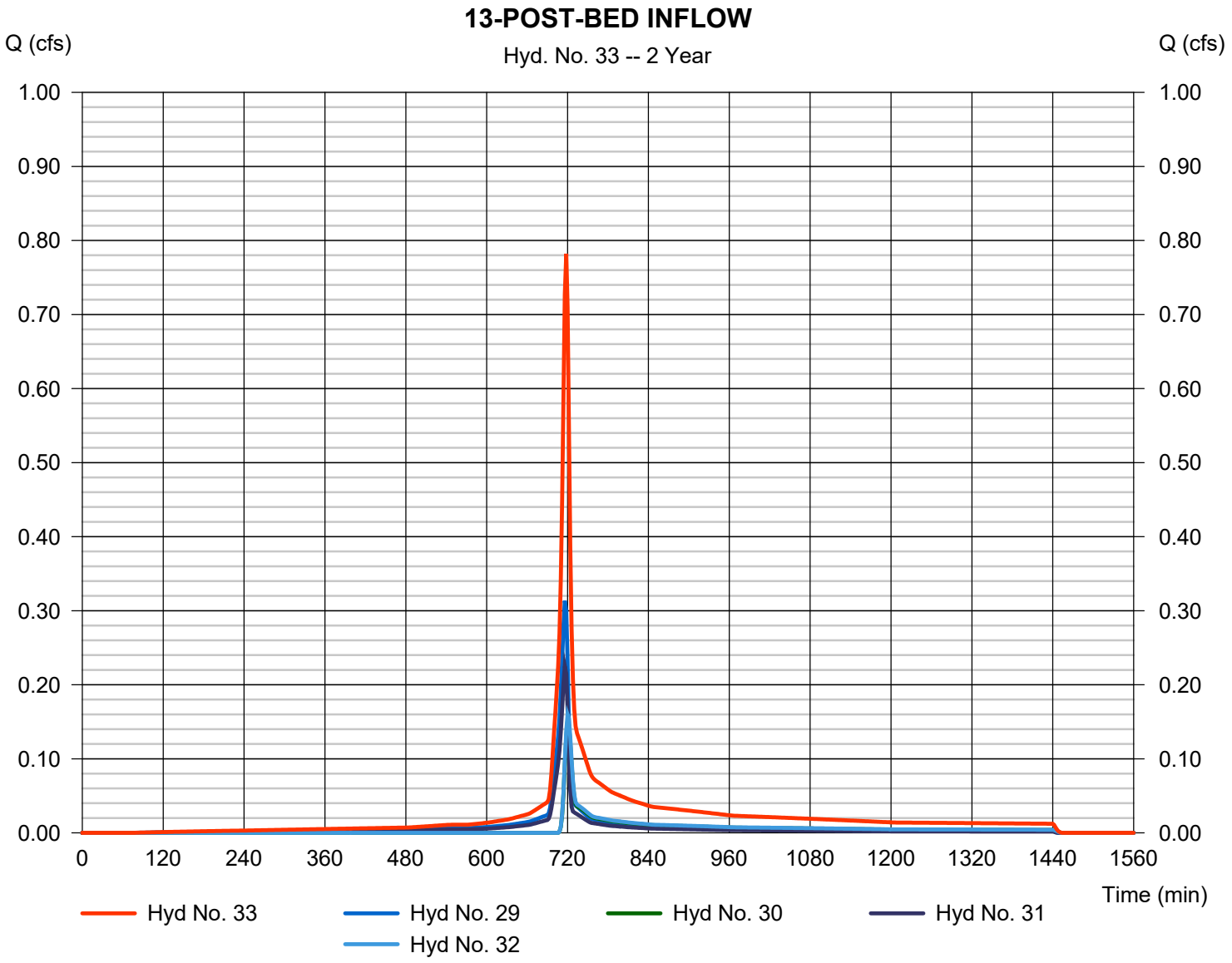
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 33

13-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	0.782 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,174 cuft
Inflow hyds.	=	29, 30, 31, 32	Contrib. drain. area	=	0.654 ac



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

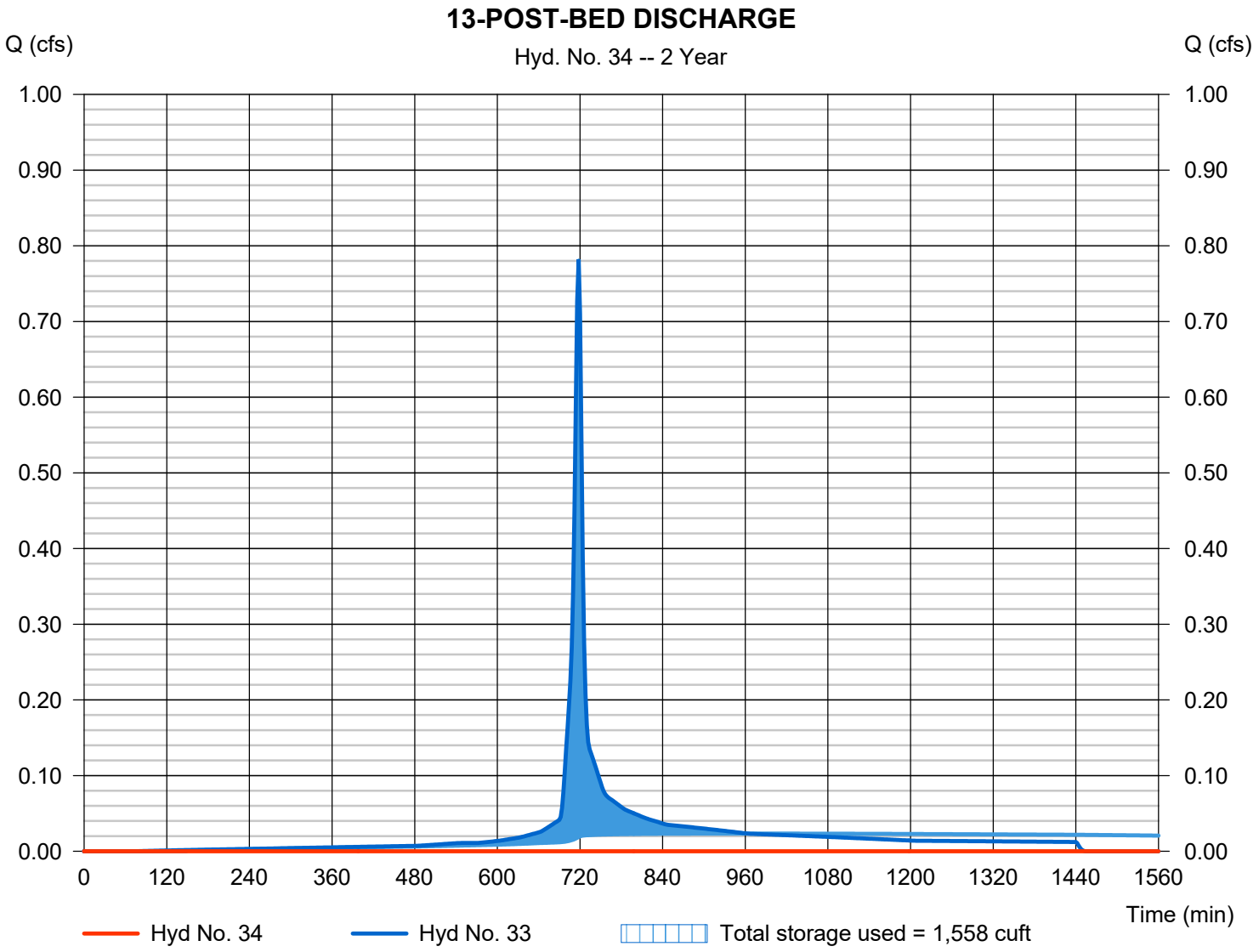
Thursday, 12 / 10 / 2020

Hyd. No. 34

13-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	n/a
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	33 - 13-POST-BED INFLOW	Max. Elevation	=	383.80 ft
Reservoir name	=	LOT 13 INFILTRATION BED	Max. Storage	=	1,558 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 5 - LOT 13 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 382.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	382.00	n/a	0	0
0.40	382.40	n/a	186	186
0.80	382.80	n/a	323	509
1.20	383.20	n/a	393	901
1.60	383.60	n/a	432	1,333
2.00	384.00	n/a	452	1,785
2.40	384.40	n/a	452	2,237
2.80	384.80	n/a	432	2,669
3.20	385.20	n/a	392	3,061
3.60	385.60	n/a	323	3,384
4.00	386.00	n/a	186	3,569

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 384.50	0.00	0.00	0.00
Length (ft)	= 58.50	0.00	0.00	0.00
Slope (%)	= 5.40	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

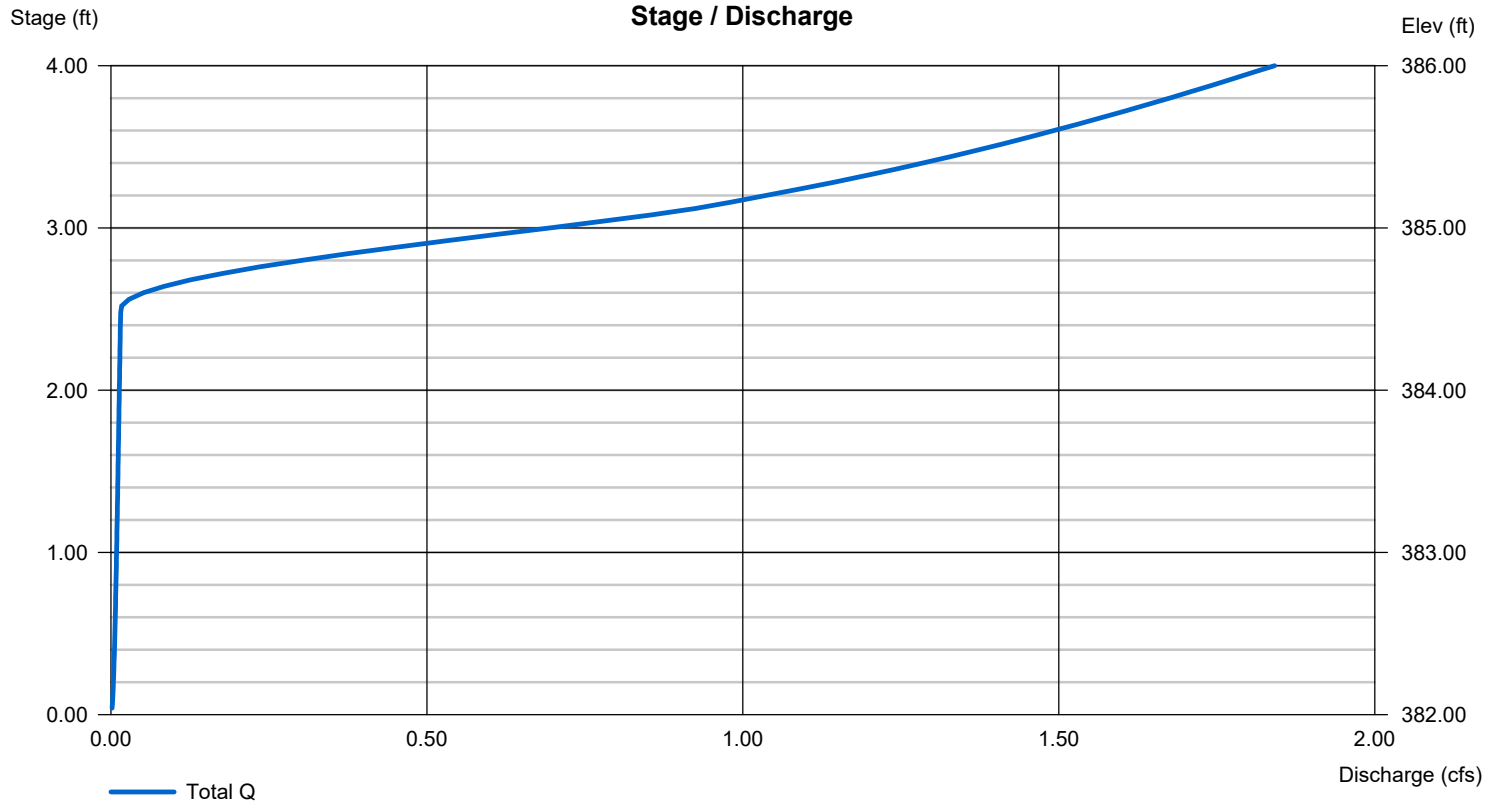
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.320 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



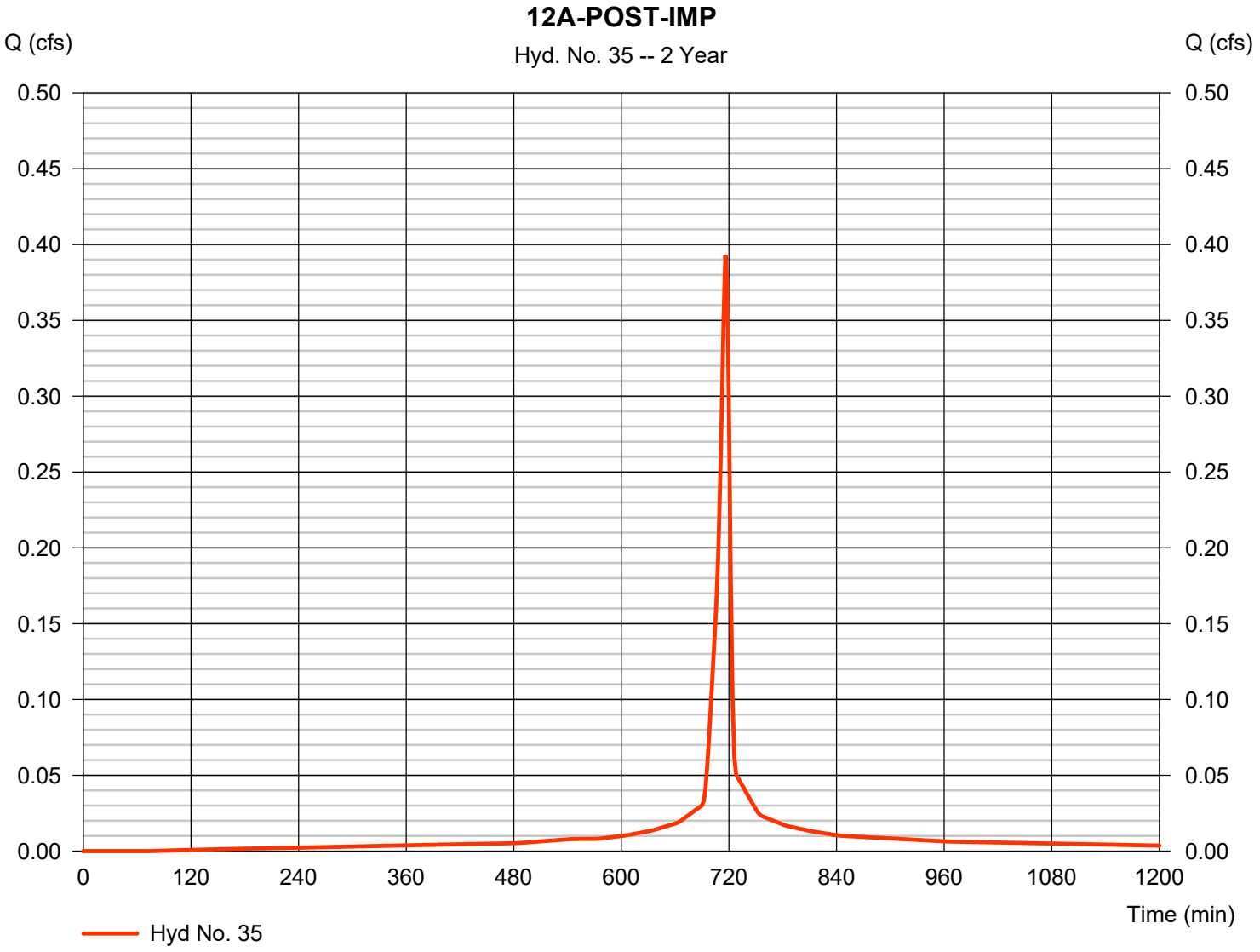
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 35

12A-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.393 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	920 cuft
Drainage area	=	0.089 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



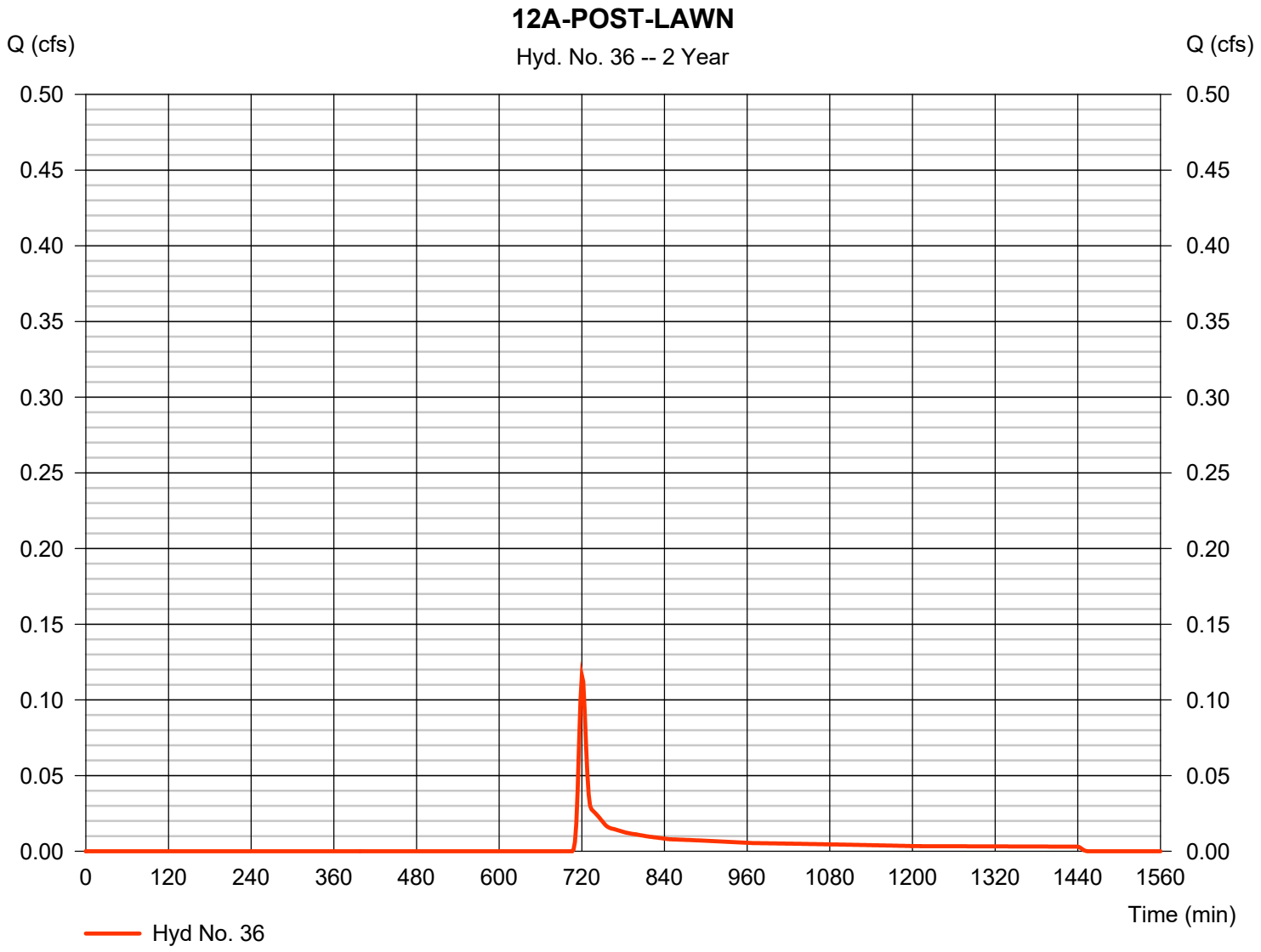
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 36

12A-POST-LAWN

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.116 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	342 cuft
Drainage area	=	0.199 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



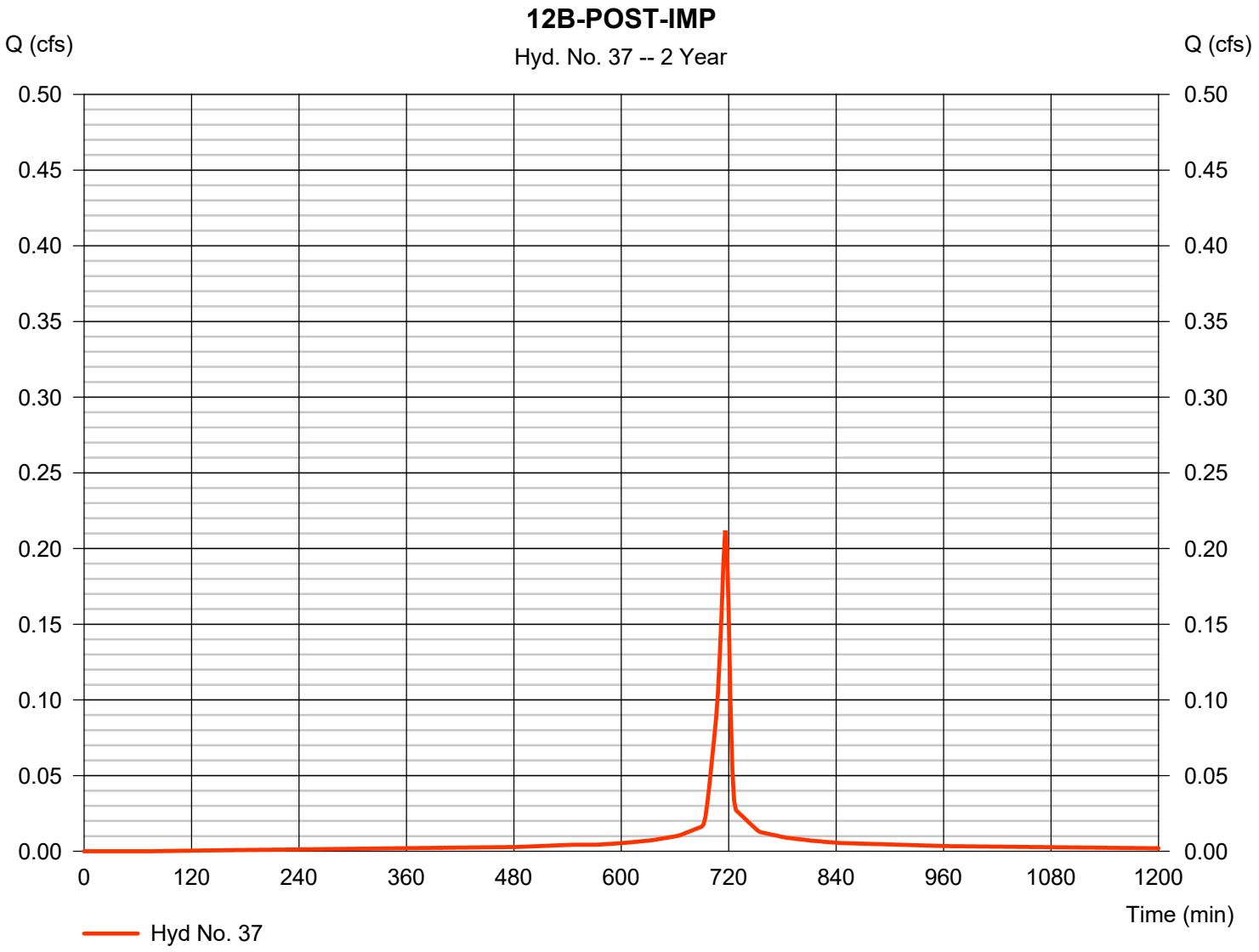
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 37

12B-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.212 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	496 cuft
Drainage area	=	0.048 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



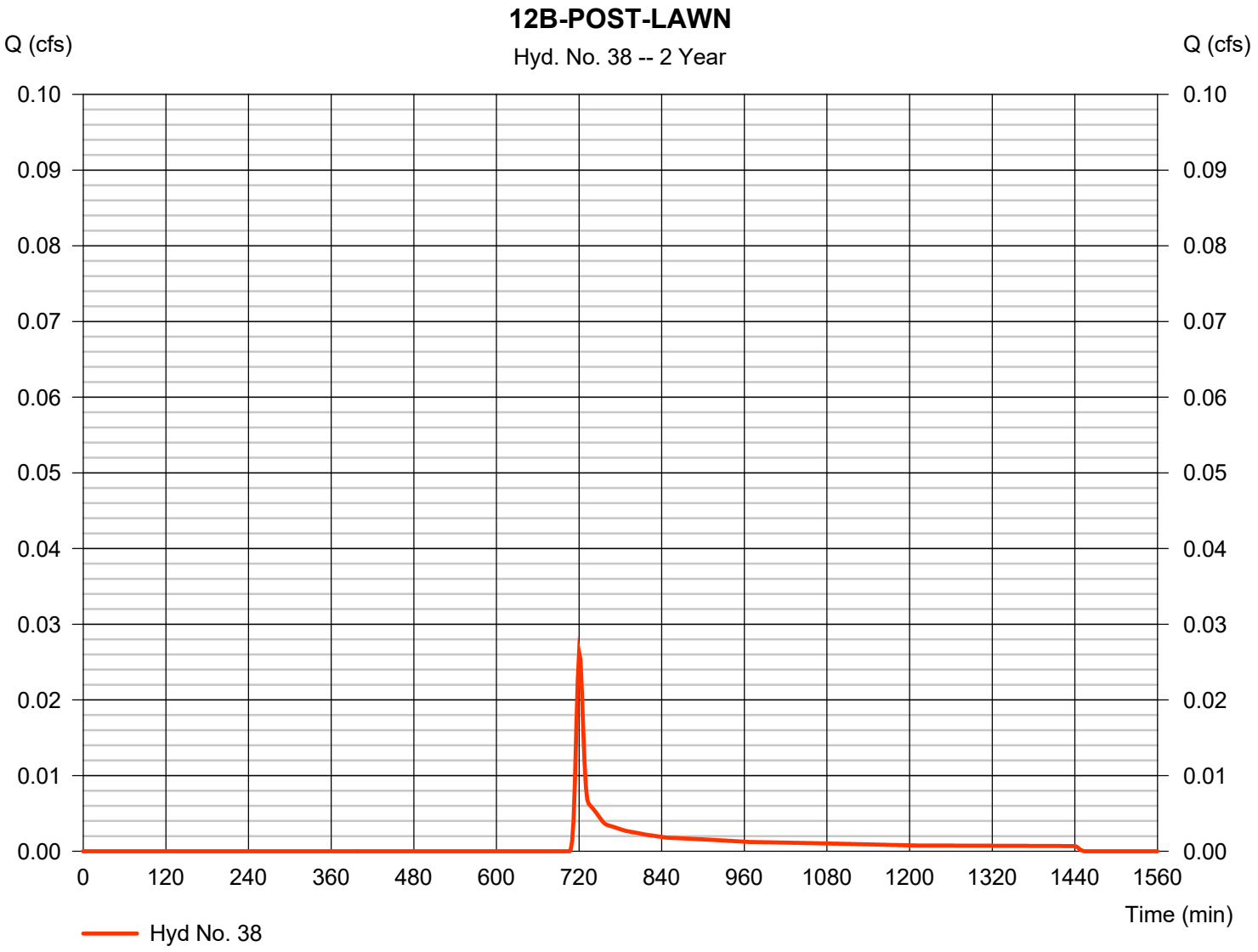
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 38

12B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.026 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 77 cuft
Drainage area	= 0.045 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



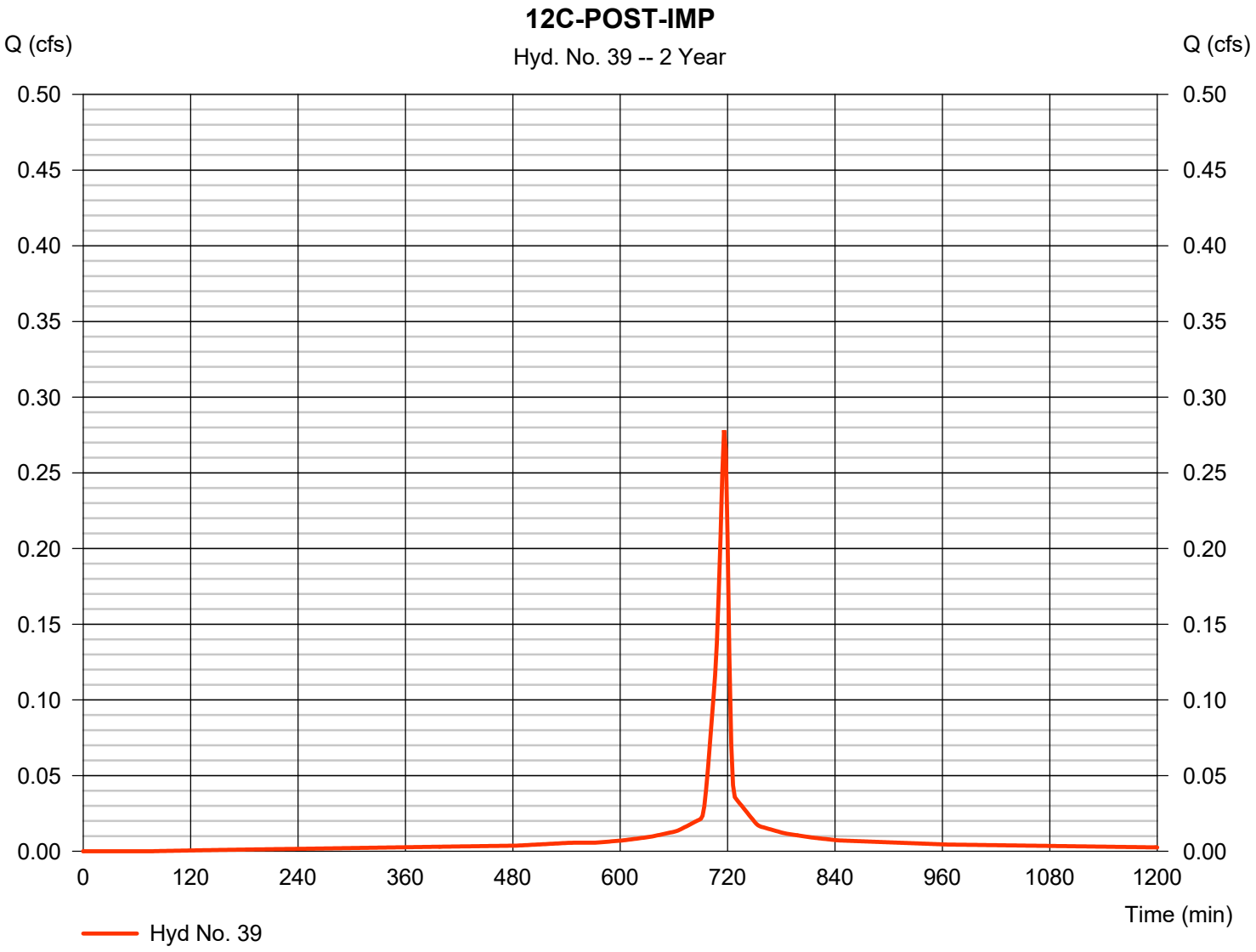
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 39

12C-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.278 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	651 cuft
Drainage area	=	0.063 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



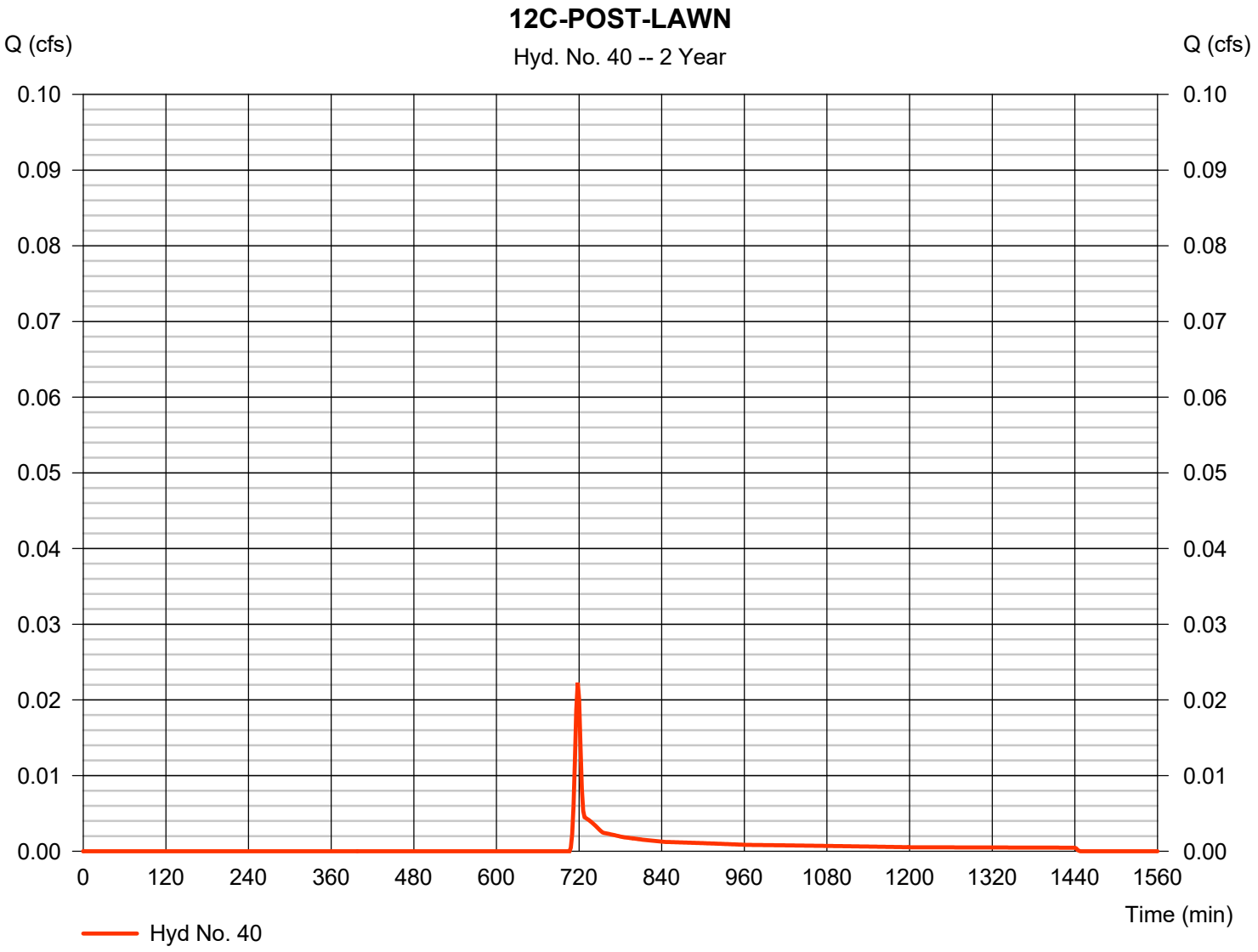
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 40

12C-POST-LAWN

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.022 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	53 cuft
Drainage area	=	0.033 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



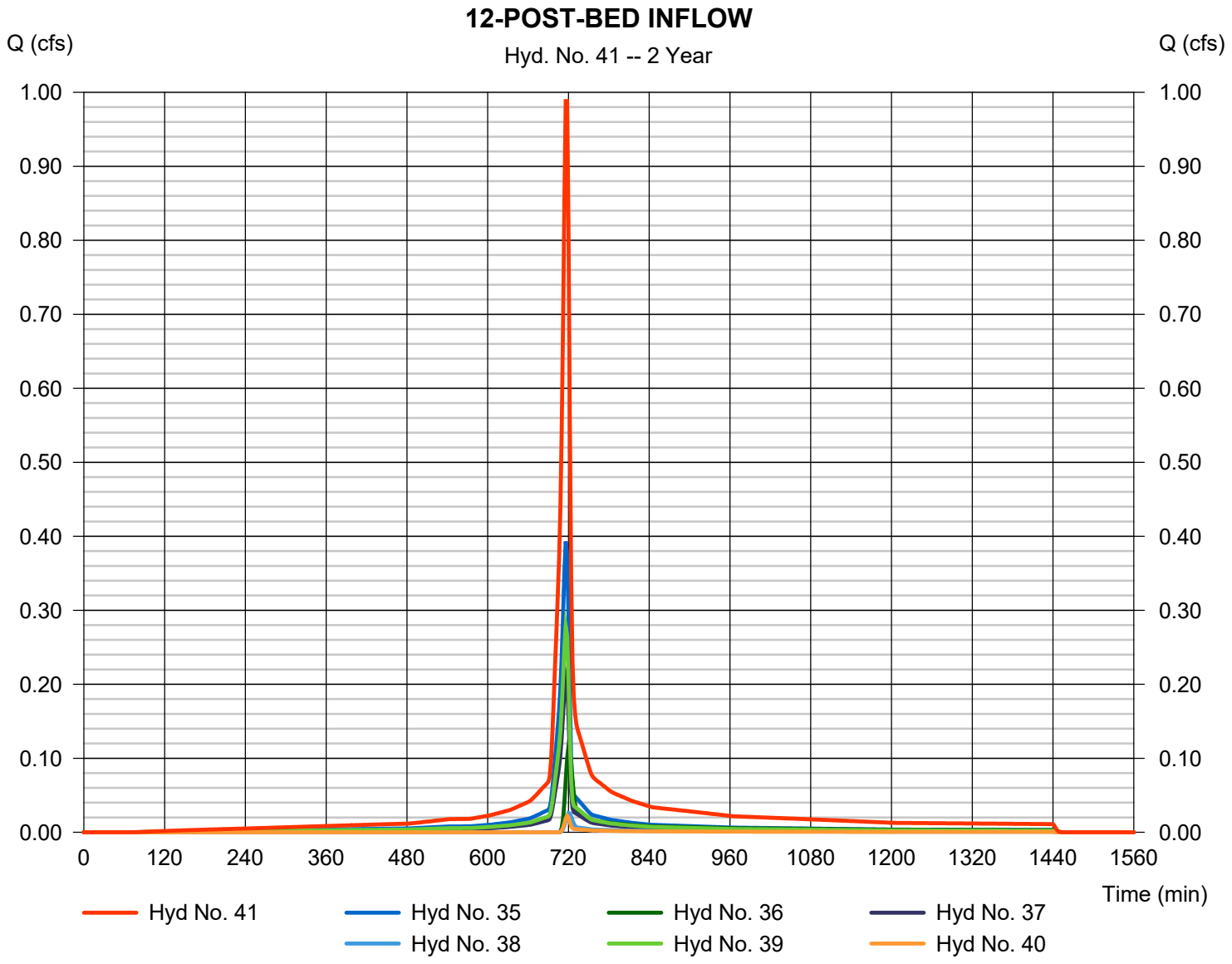
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Thursday, 12 / 10 / 2020

Hyd. No. 41

12-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	0.988 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,539 cuft
Inflow hyds.	=	35, 36, 37, 38, 39, 40	Contrib. drain. area	=	0.477 ac



Hydrograph Report

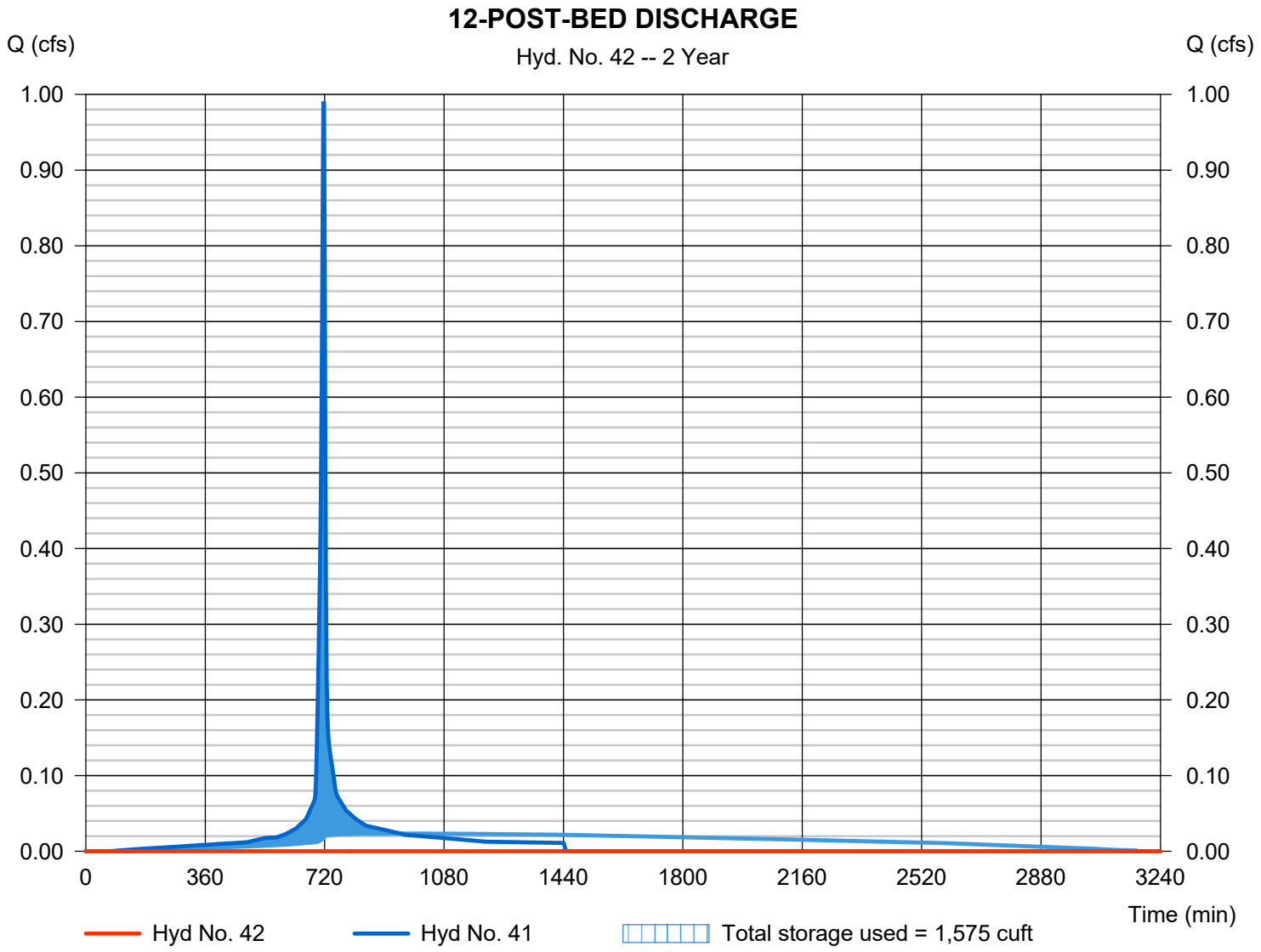
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 42

12-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	202 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	41 - 12-POST-BED INFLOW	Max. Elevation	=	379.64 ft
Reservoir name	=	LOT 12 INFILTRATION BED	Max. Storage	=	1,575 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 6 - LOT 12 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 378.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 70.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	378.00	n/a	0	0
0.40	378.40	n/a	212	212
0.80	378.80	n/a	368	580
1.20	379.20	n/a	448	1,028
1.60	379.60	n/a	493	1,521
2.00	380.00	n/a	515	2,037
2.40	380.40	n/a	515	2,552
2.80	380.80	n/a	493	3,045
3.20	381.20	n/a	448	3,493
3.60	381.60	n/a	368	3,861
4.00	382.00	n/a	212	4,072

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 381.00	0.00	0.00	0.00
Length (ft)	= 52.40	0.00	0.00	0.00
Slope (%)	= 1.70	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

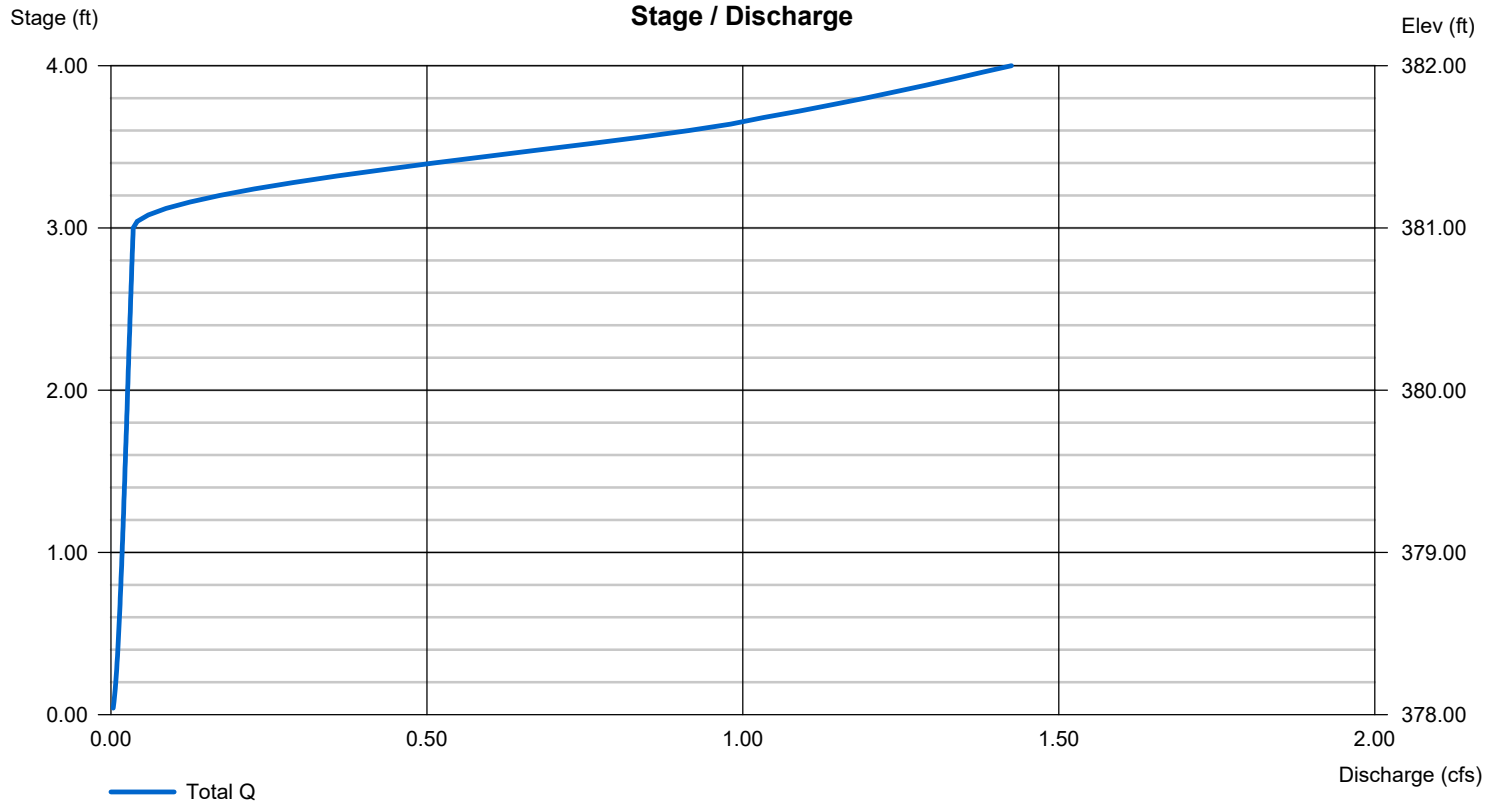
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.560 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

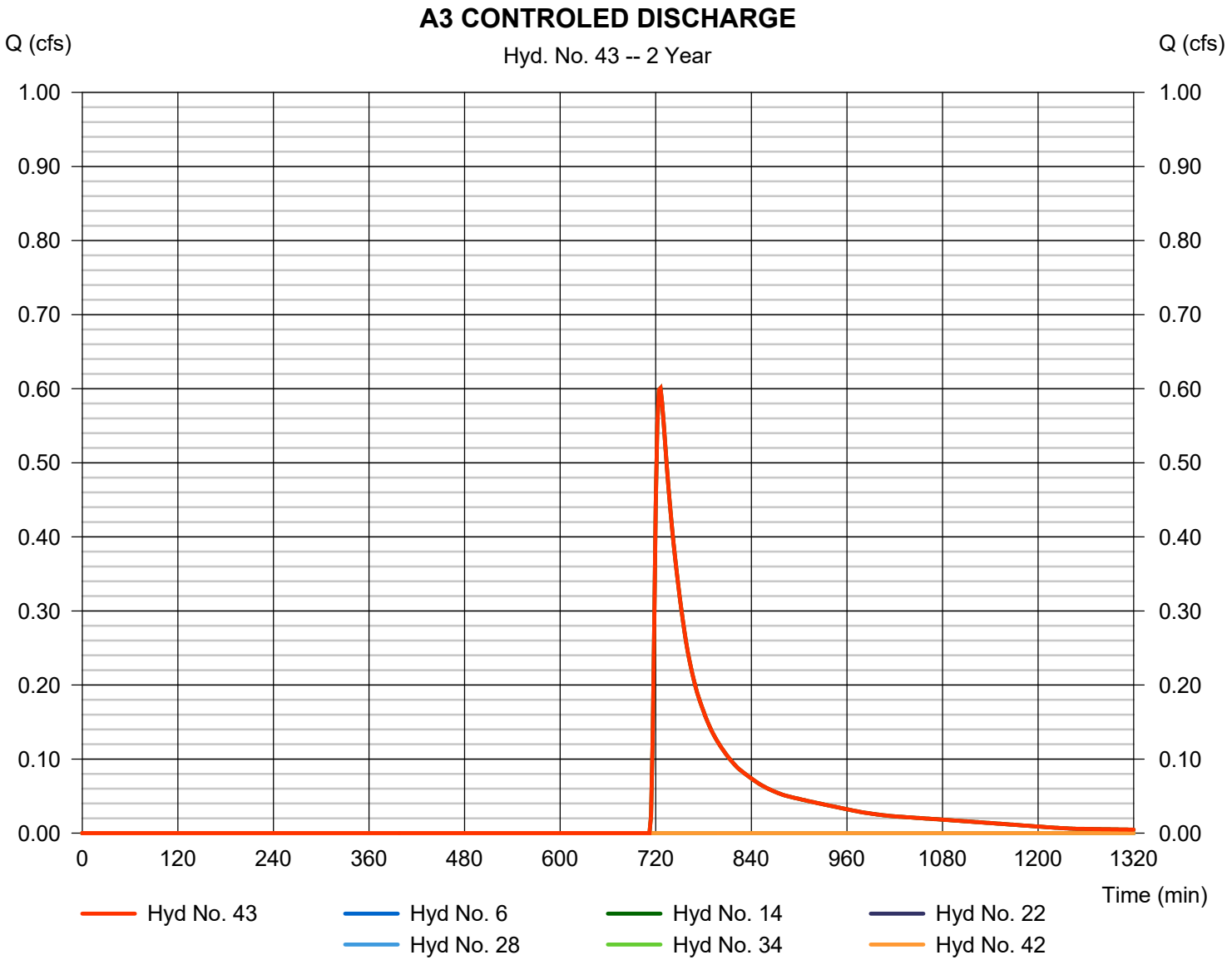


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Hyd. No. 43

A3 CONTROLED DISCHARGE

Hydrograph type	=	Combine	Peak discharge	=	0.601 cfs
Storm frequency	=	2 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	2,413 cuft
Inflow hyds.	=	6, 14, 22, 28, 34, 42	Contrib. drain. area	=	0.000 ac



Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	0.559	0.676	-------	0.850	0.998	1.208	1.384	1.575	11A-POST-IMP
2	SCS Runoff	------	0.077	0.188	-------	0.406	0.616	0.948	1.249	1.591	11A-POST-LAWN
3	SCS Runoff	------	0.077	0.093	-------	0.117	0.137	0.166	0.190	0.216	11B-POST-IMP
4	SCS Runoff	------	0.031	0.075	-------	0.162	0.246	0.379	0.499	0.635	11B-POST-LAWN
5	Combine	1, 2, 3, 4	0.683	0.961	-------	1.453	1.907	2.604	3.222	3.917	11-POST-BED INFLOW
6	Reservoir	5	0.281	0.542	-------	0.923	1.175	1.496	1.753	2.020	11-POST-BED DISCHARGE

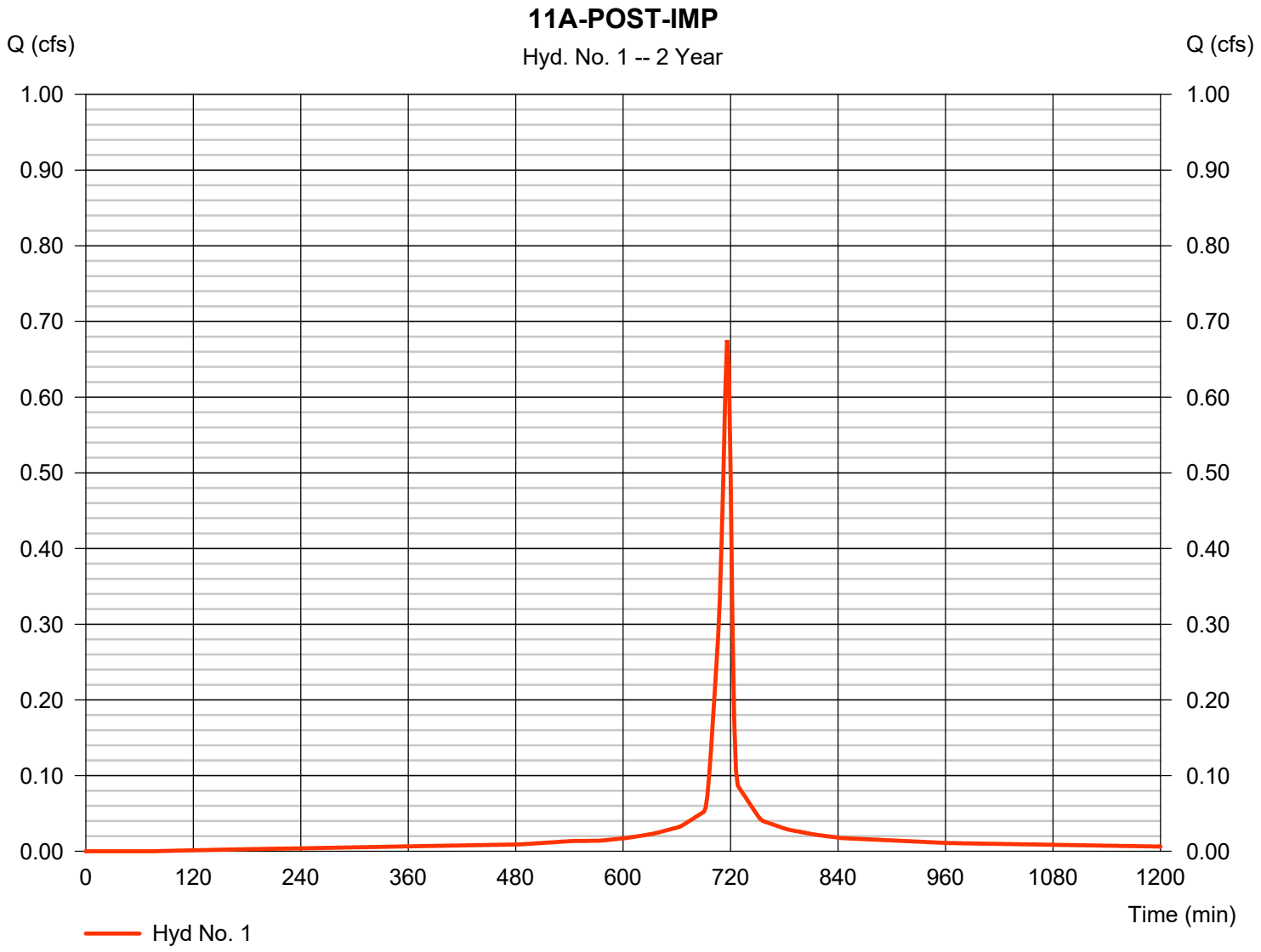
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 01 / 17 / 2021

Hyd. No. 1

11A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.676 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,581 cuft
Drainage area	= 0.153 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



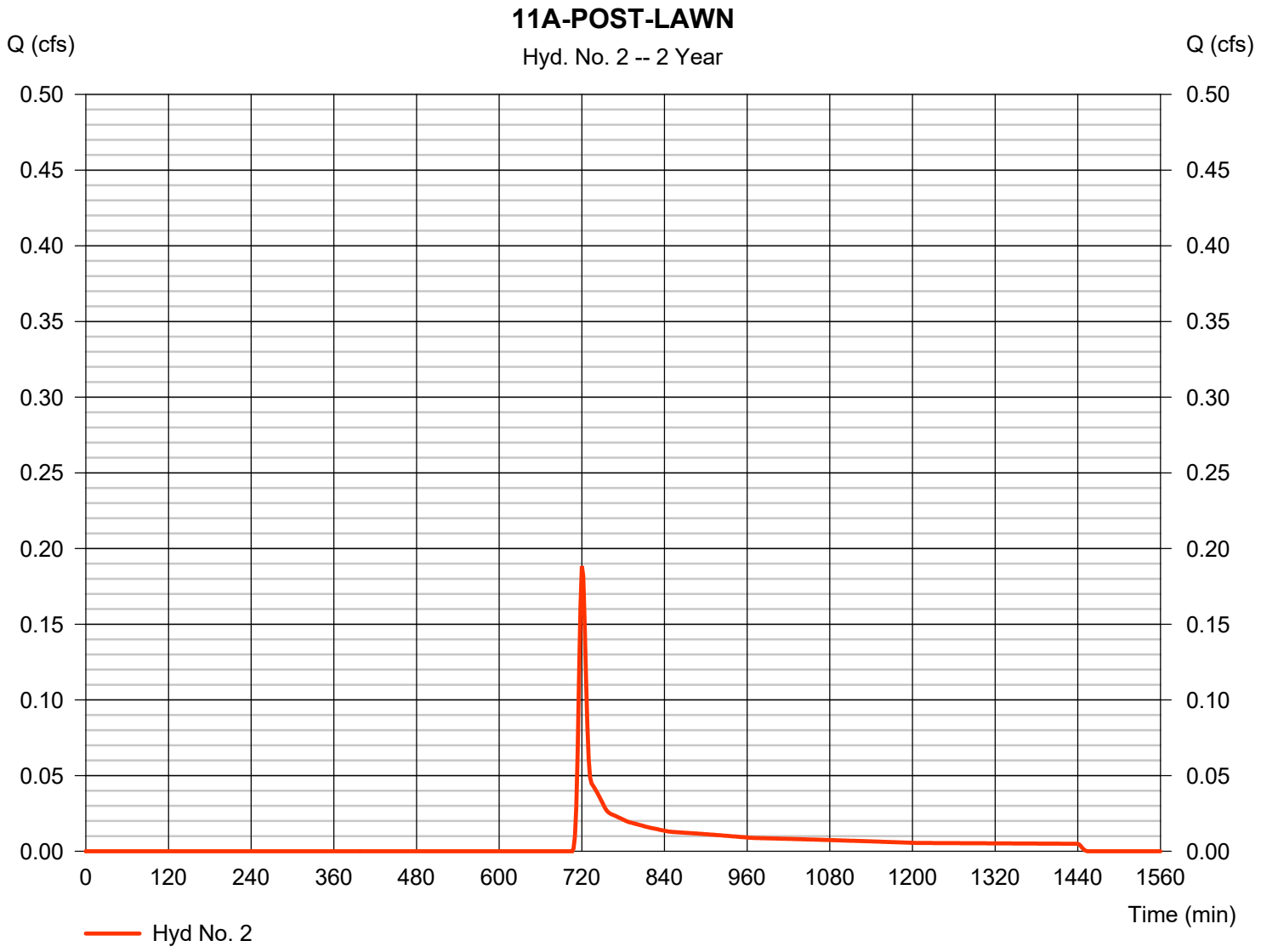
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Sunday, 01 / 17 / 2021

Hyd. No. 2

11A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.188 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 554 cuft
Drainage area	= 0.323 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



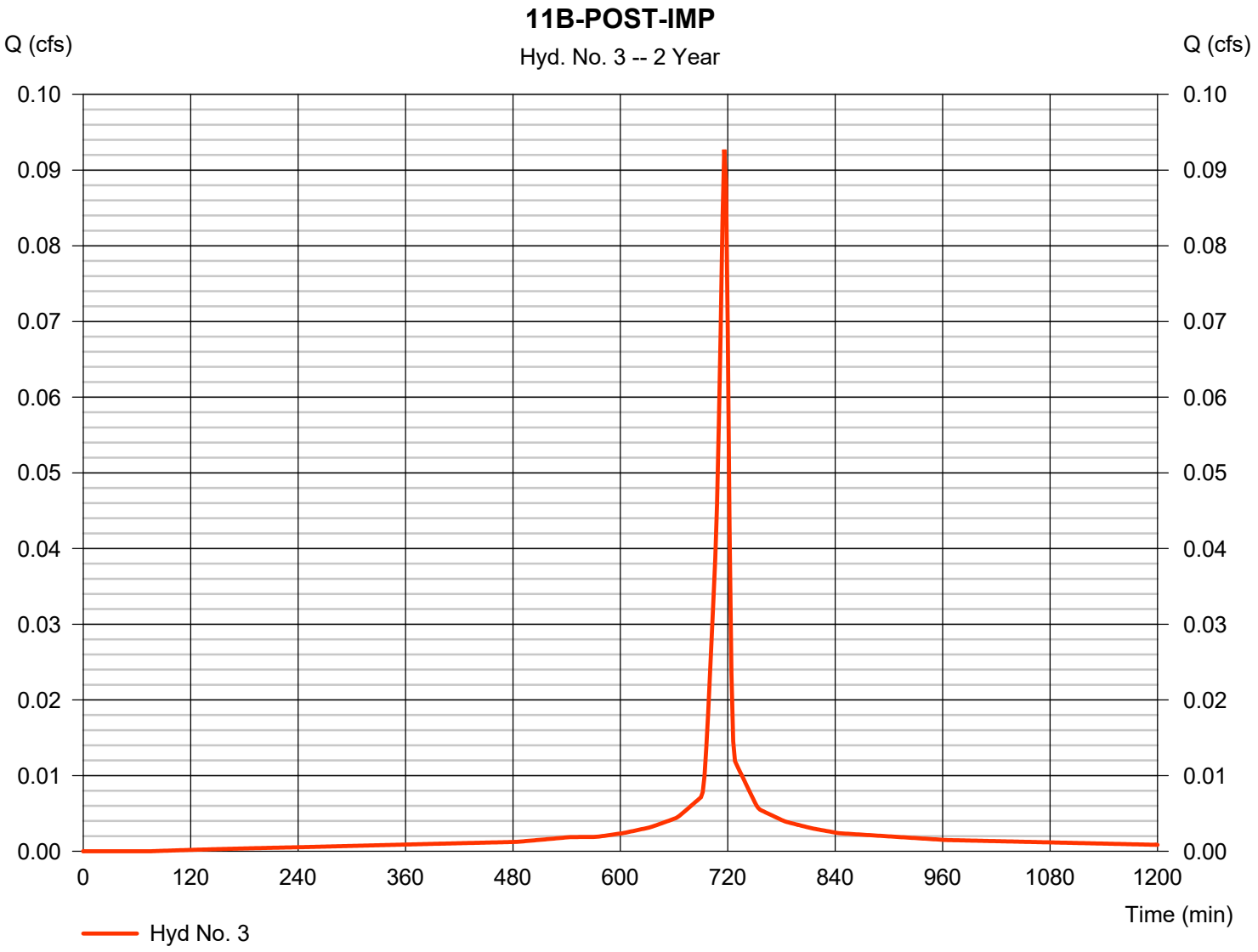
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Sunday, 01 / 17 / 2021

Hyd. No. 3

11B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.093 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 217 cuft
Drainage area	= 0.021 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



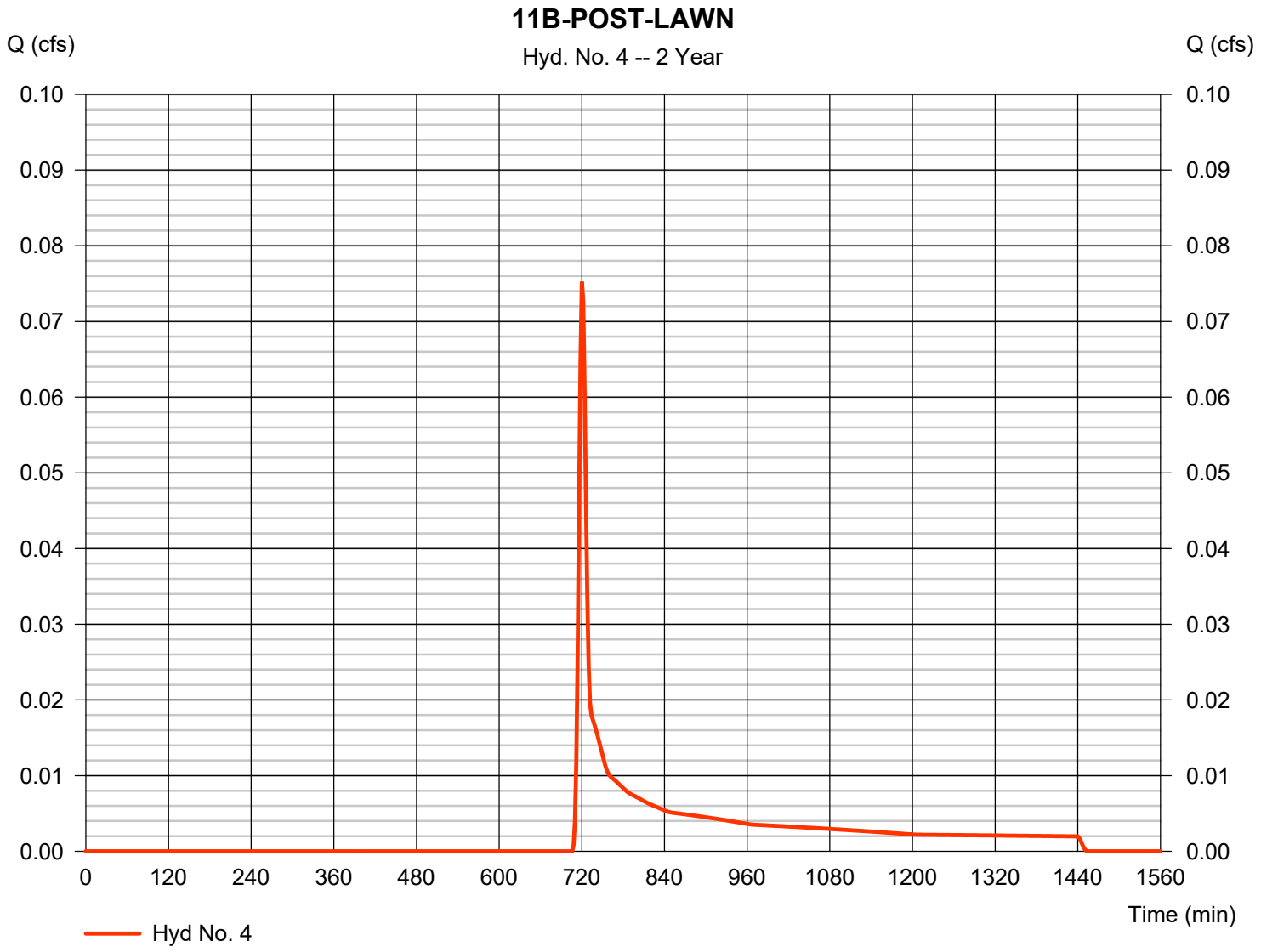
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Sunday, 01 / 17 / 2021

Hyd. No. 4

11B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.075 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 221 cuft
Drainage area	= 0.129 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



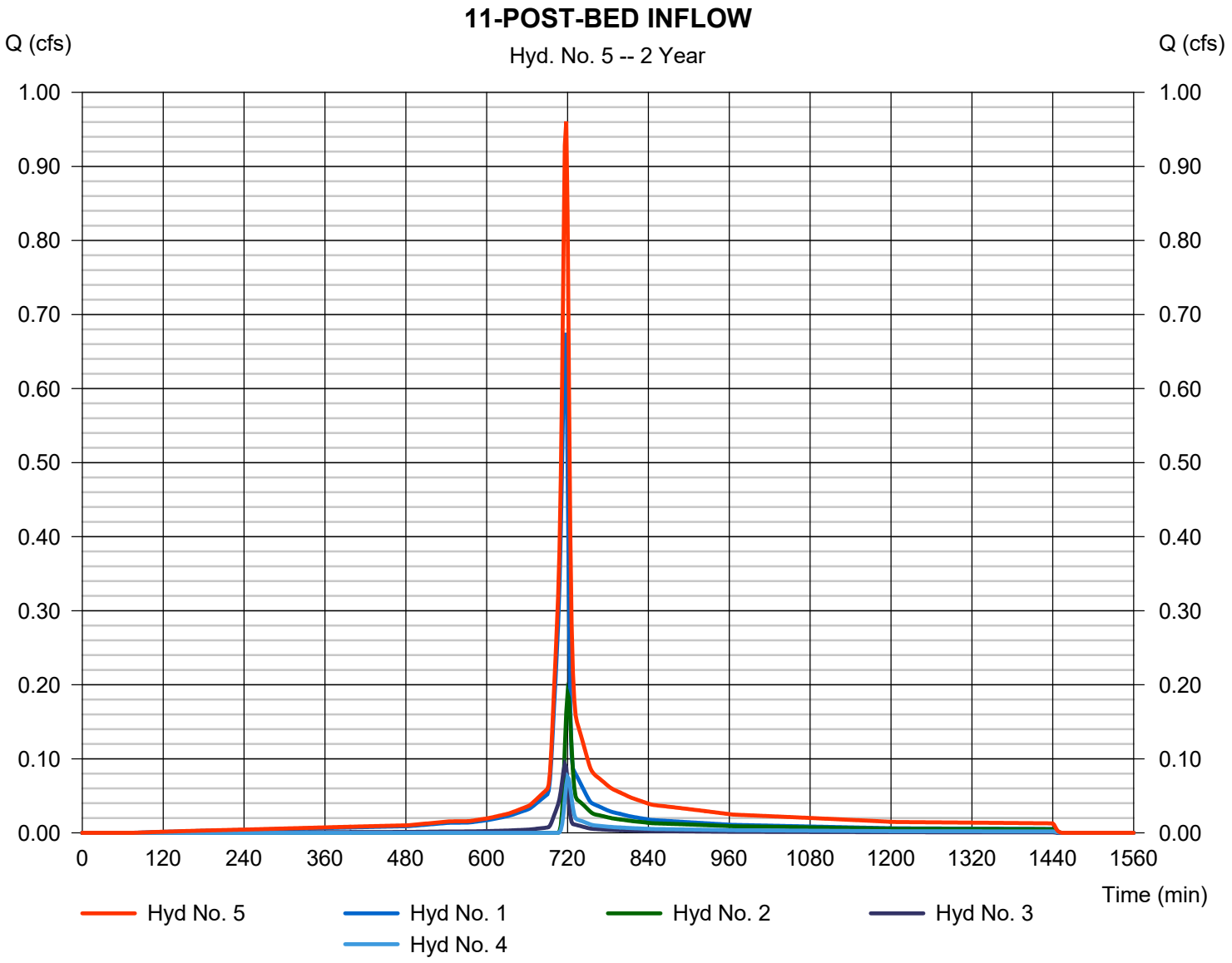
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Sunday, 01 / 17 / 2021

Hyd. No. 5

11-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	0.961 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,574 cuft
Inflow hyds.	=	1, 2, 3, 4	Contrib. drain. area	=	0.626 ac



Hydrograph Report

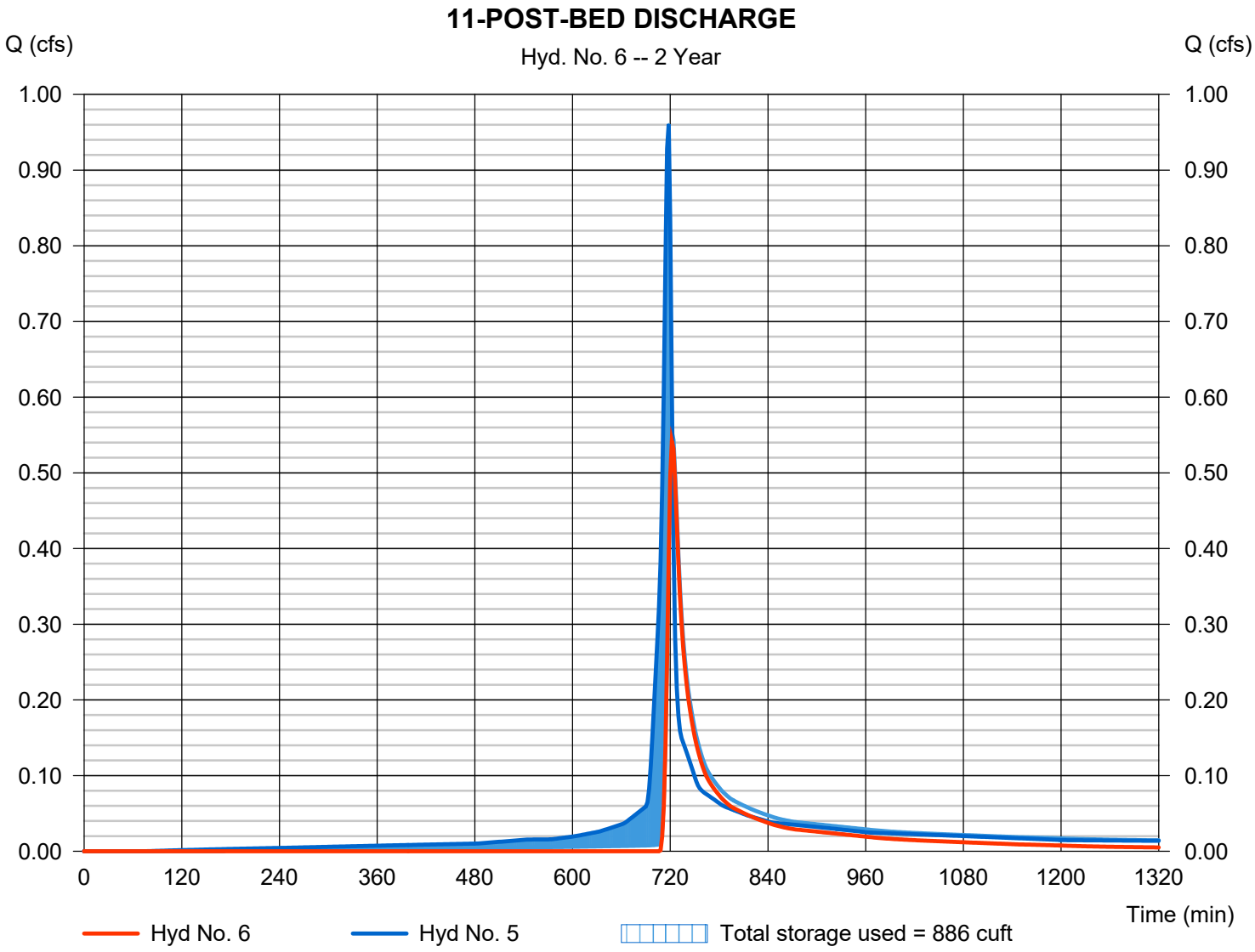
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 01 / 17 / 2021

Hyd. No. 6

11-POST-BED DISCHARGE

Hydrograph type	= Reservoir	Peak discharge	= 0.542 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 1,528 cuft
Inflow hyd. No.	= 5 - 11-POST-BED INFLOW	Max. Elevation	= 363.68 ft
Reservoir name	= LOT 11 INFIL BED	Max. Storage	= 886 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 01 / 17 / 2021

Pond No. 1 - LOT 11 INFIL BED

Pond Data

UG Chambers -Invert elev. = 362.50 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	362.50	n/a	0	0
0.40	362.90	n/a	186	186
0.80	363.30	n/a	323	509
1.20	363.70	n/a	393	901
1.60	364.10	n/a	432	1,333
2.00	364.50	n/a	452	1,785
2.40	364.90	n/a	452	2,237
2.80	365.30	n/a	432	2,669
3.20	365.70	n/a	392	3,061
3.60	366.10	n/a	323	3,384
4.00	366.50	n/a	186	3,569

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 363.25	0.00	0.00	0.00
Length (ft)	= 71.00	0.00	0.00	0.00
Slope (%)	= 4.60	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

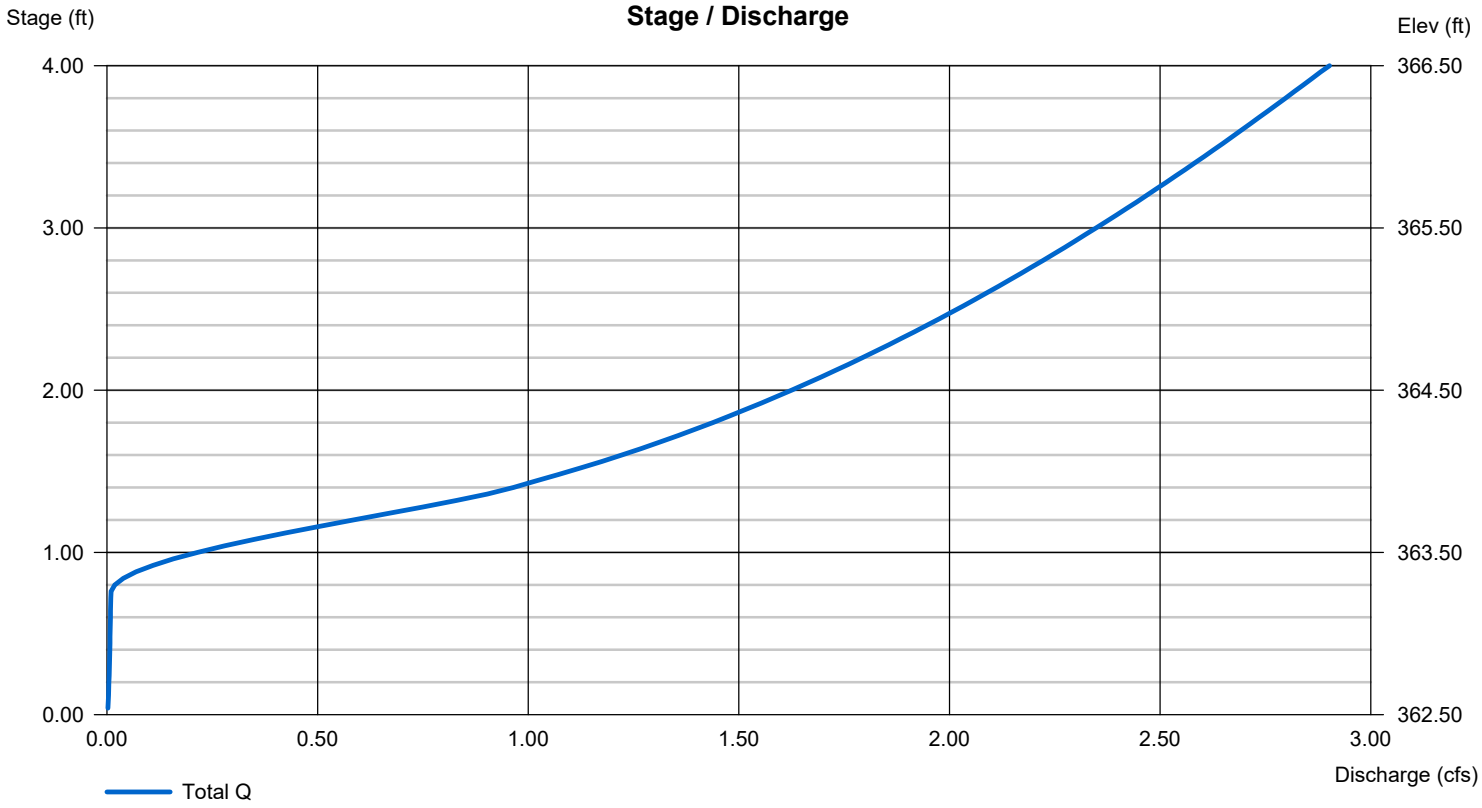
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.390 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



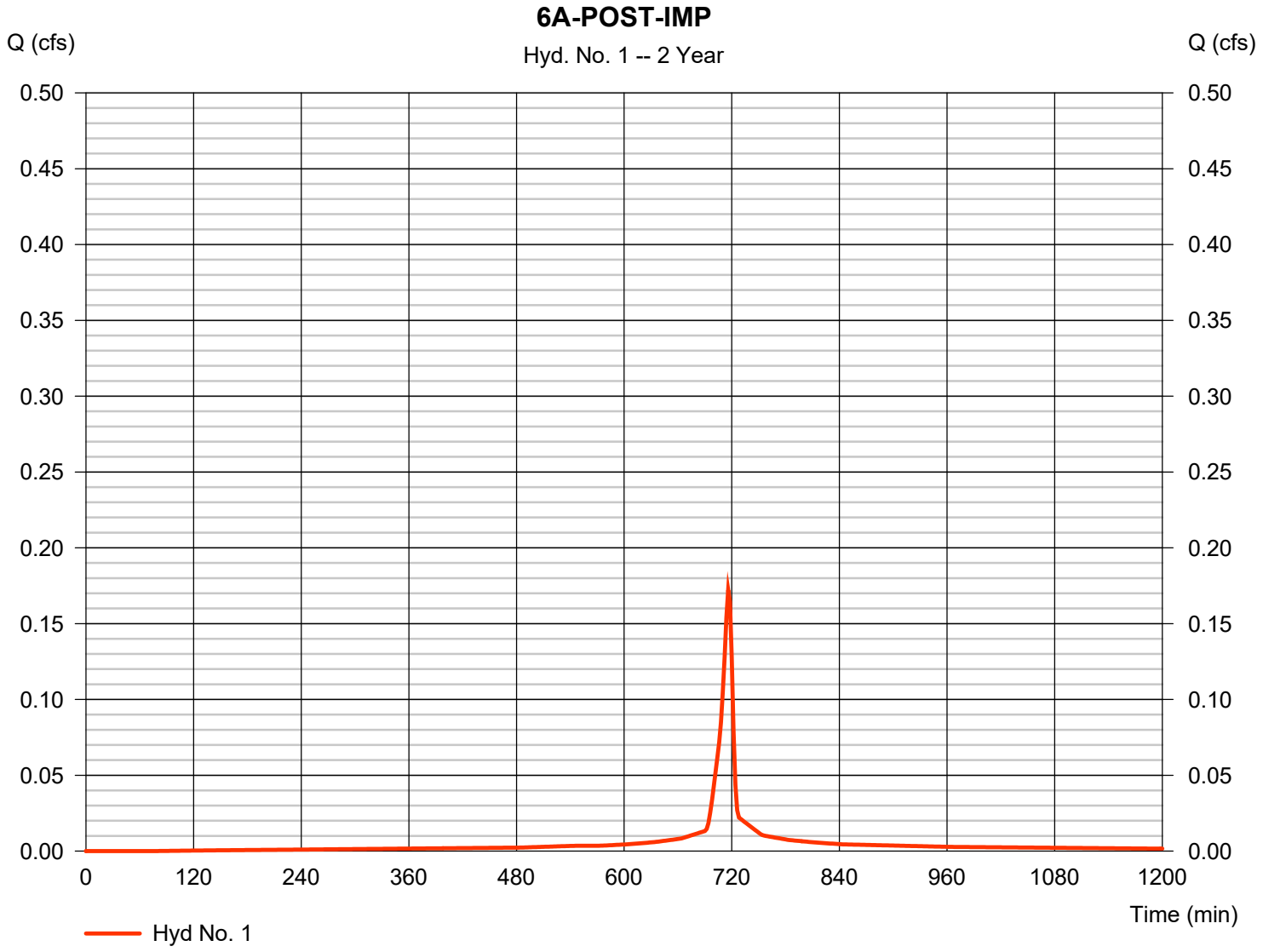
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 1

6A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.172 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 403 cuft
Drainage area	= 0.039 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



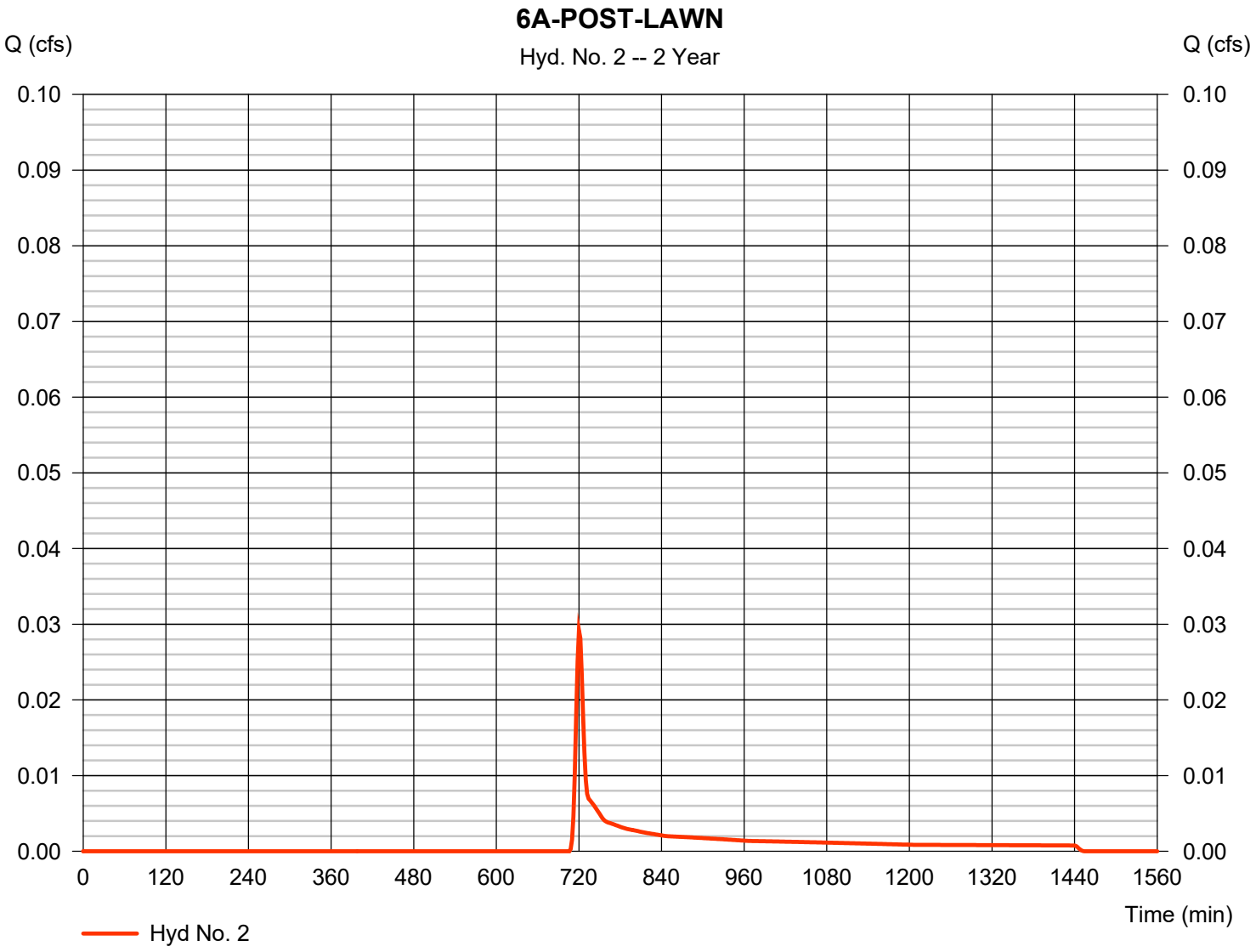
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 2

6A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.029 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 86 cuft
Drainage area	= 0.050 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



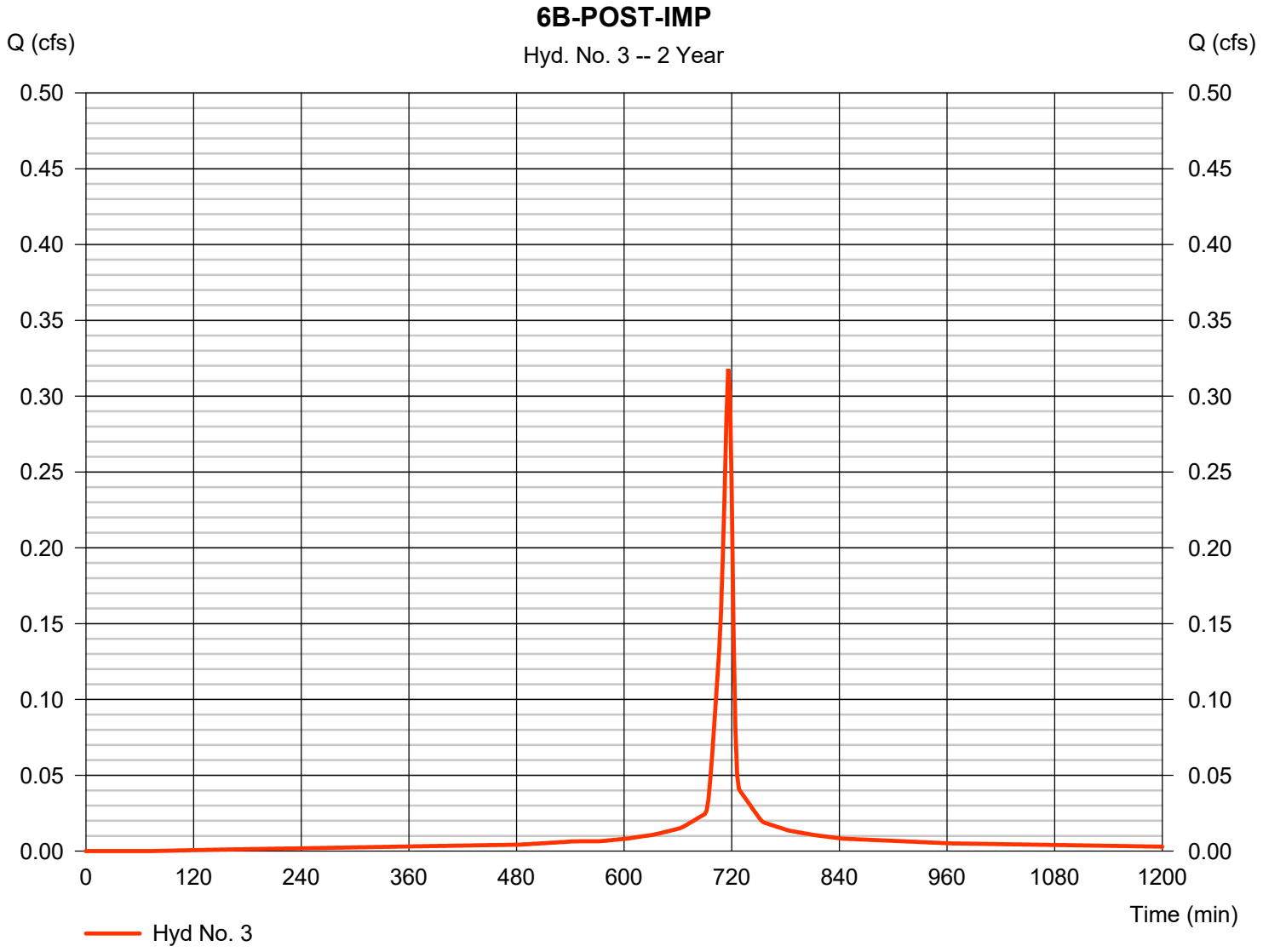
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 3

6B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.318 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 744 cuft
Drainage area	= 0.072 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



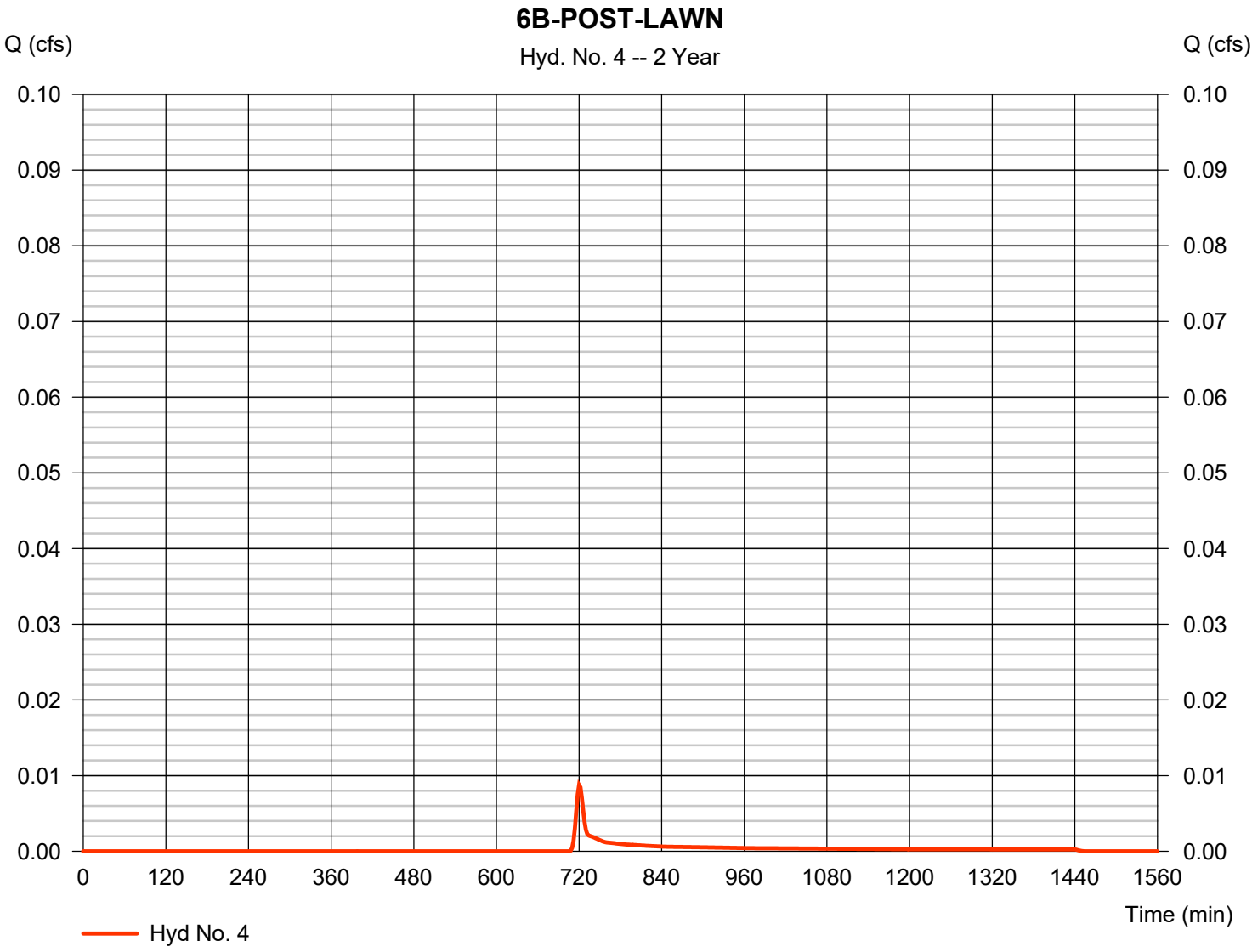
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 4

6B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.009 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 26 cuft
Drainage area	= 0.015 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



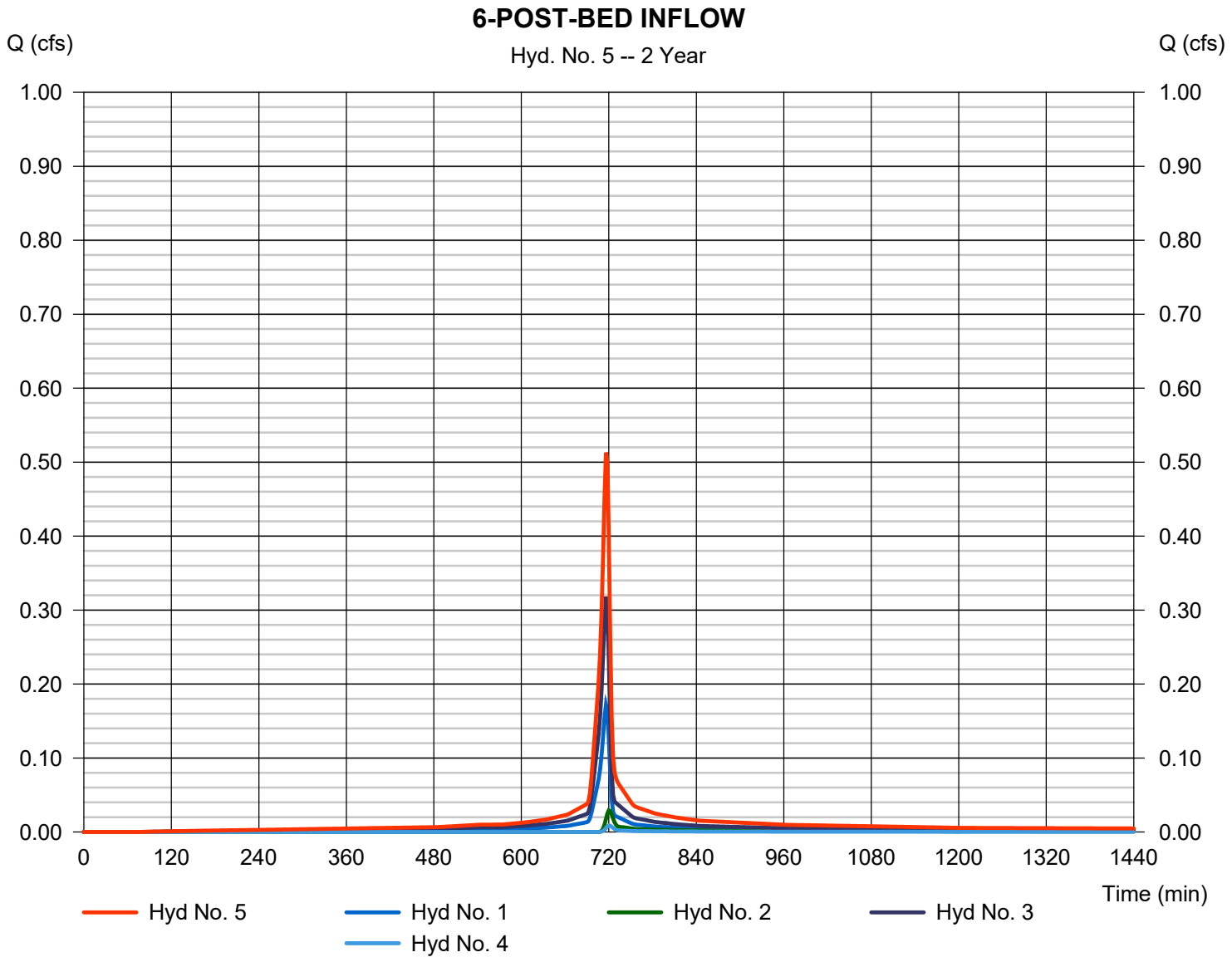
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 5

6-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.513 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,259 cuft
Inflow hyds.	= 1, 2, 3, 4	Contrib. drain. area	= 0.176 ac



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

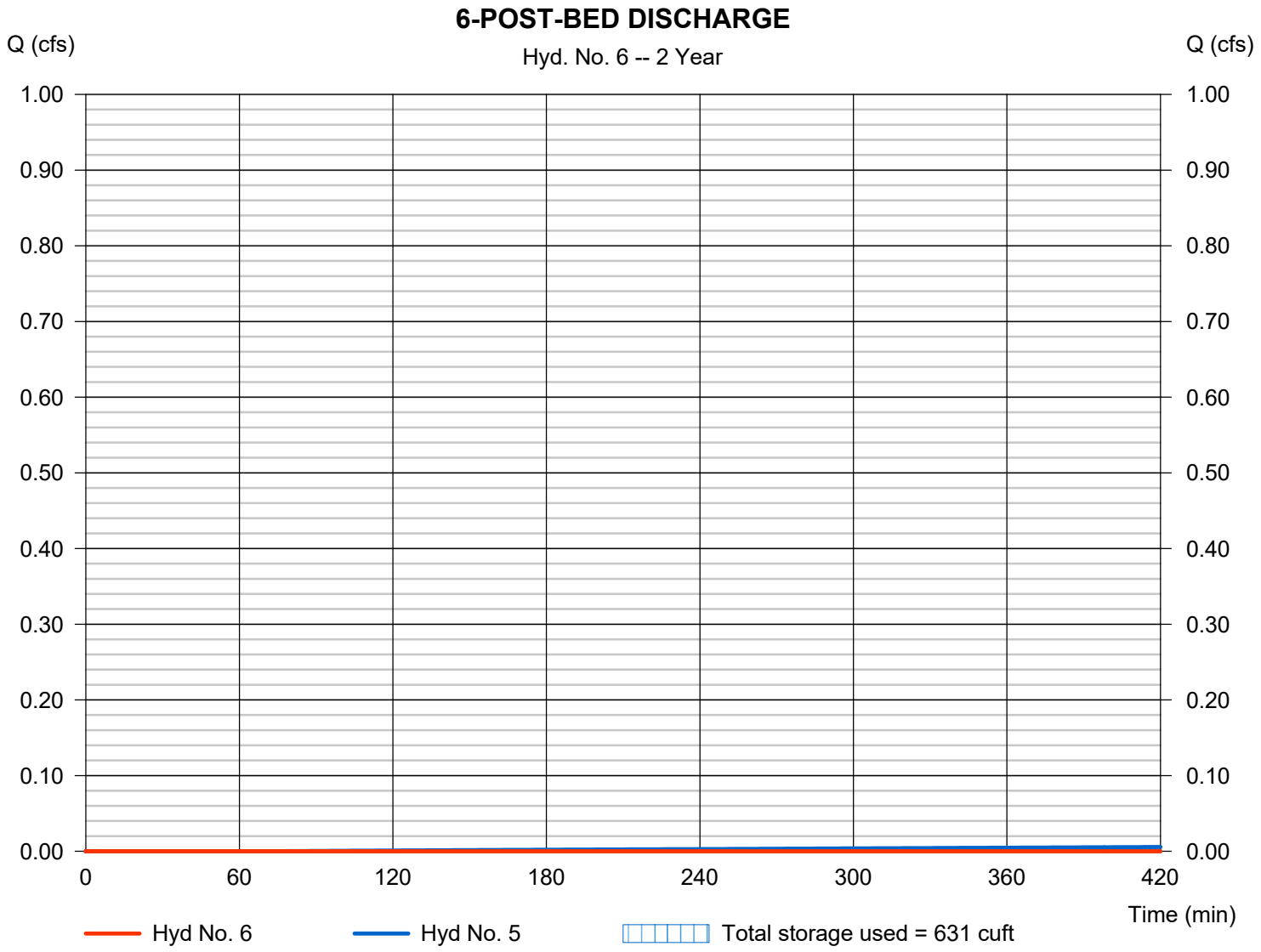
Monday, 12 / 7 / 2020

Hyd. No. 6

6-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	356 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	5 - 6-POST-BED INFLOW	Max. Elevation	=	379.40 ft
Reservoir name	=	LOT 6 INFILTRATION BED	Max. Storage	=	631 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 1 - LOT 6 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 377.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 30.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	377.00	n/a	0	0
0.40	377.40	n/a	52	52
0.80	377.80	n/a	91	143
1.20	378.20	n/a	111	254
1.60	378.60	n/a	122	376
2.00	379.00	n/a	127	503
2.40	379.40	n/a	127	630
2.80	379.80	n/a	122	752
3.20	380.20	n/a	111	862
3.60	380.60	n/a	91	953
4.00	381.00	n/a	52	1,005

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 380.00	0.00	0.00	0.00
Length (ft)	= 67.00	0.00	0.00	0.00
Slope (%)	= 10.80	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

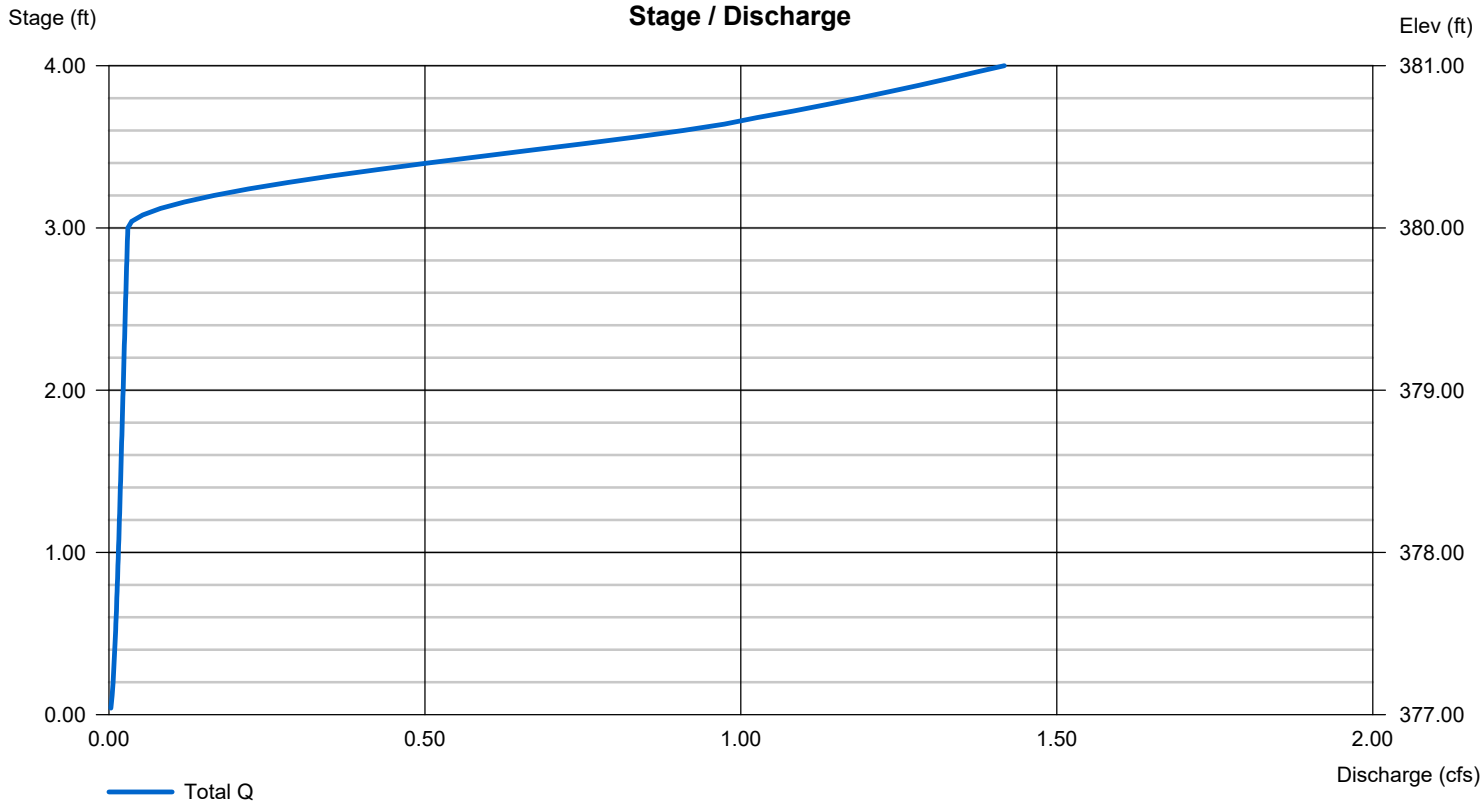
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.920 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



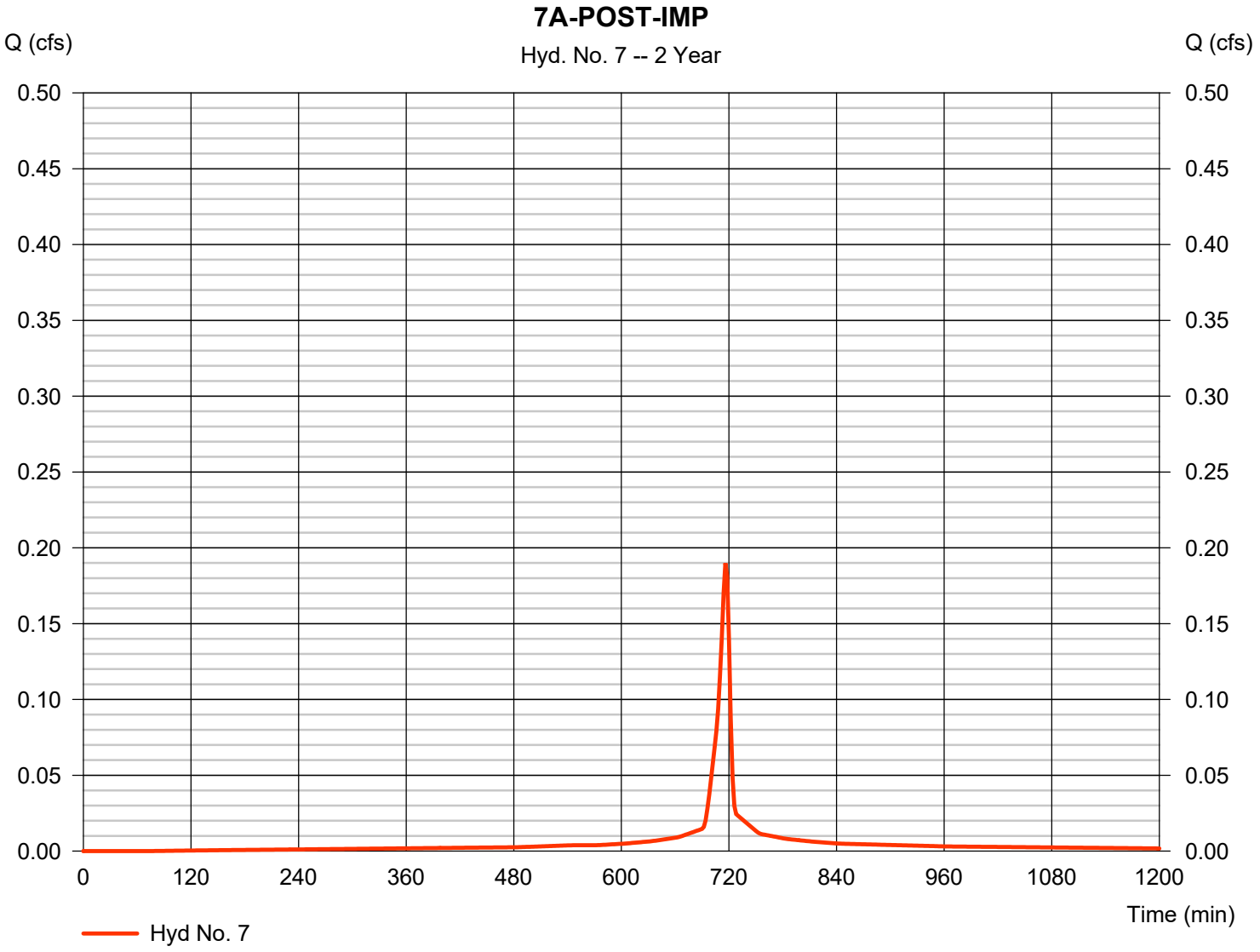
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 7

7A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.190 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 444 cuft
Drainage area	= 0.043 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



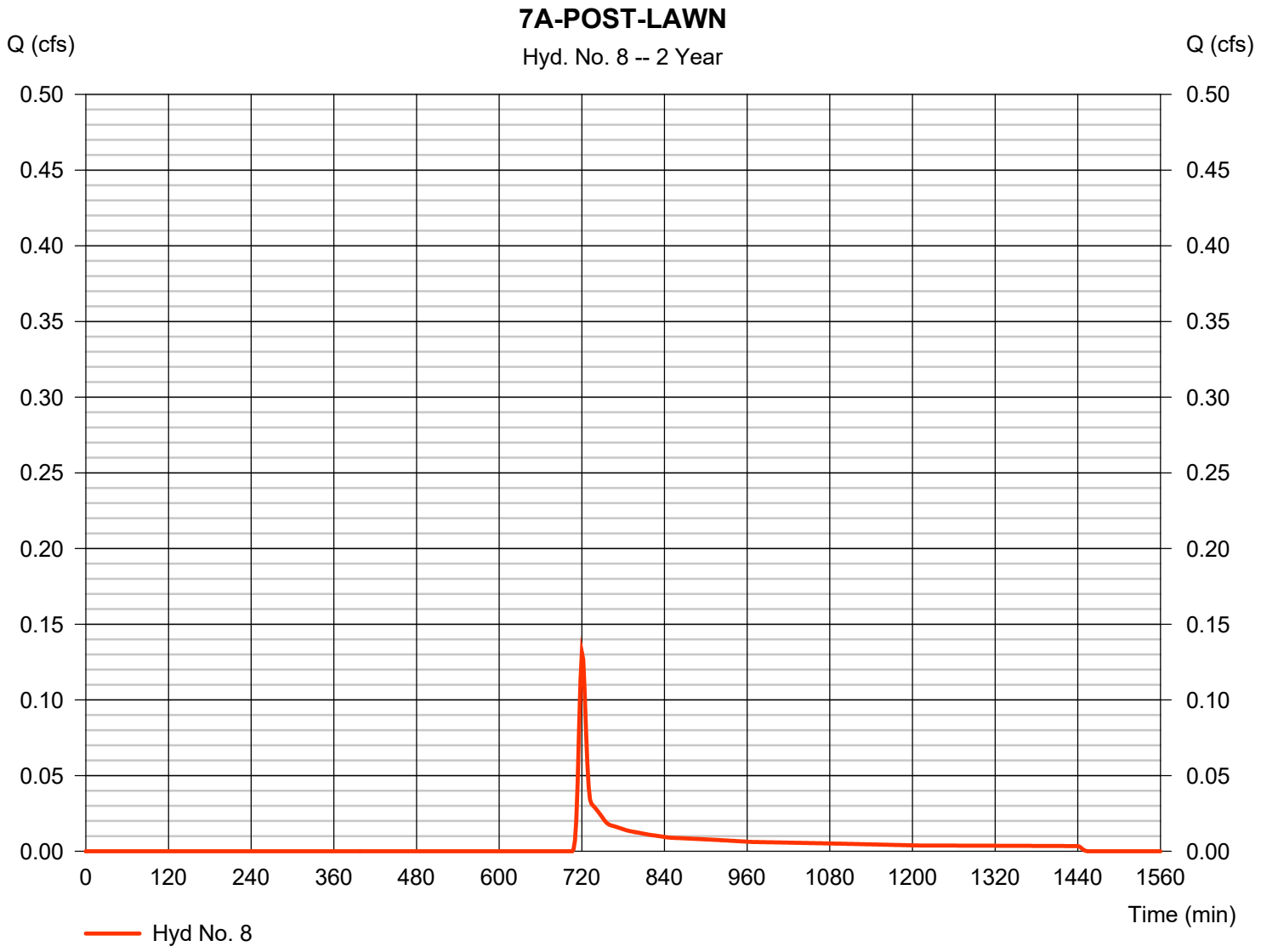
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 8

7A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.131 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 386 cuft
Drainage area	= 0.225 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



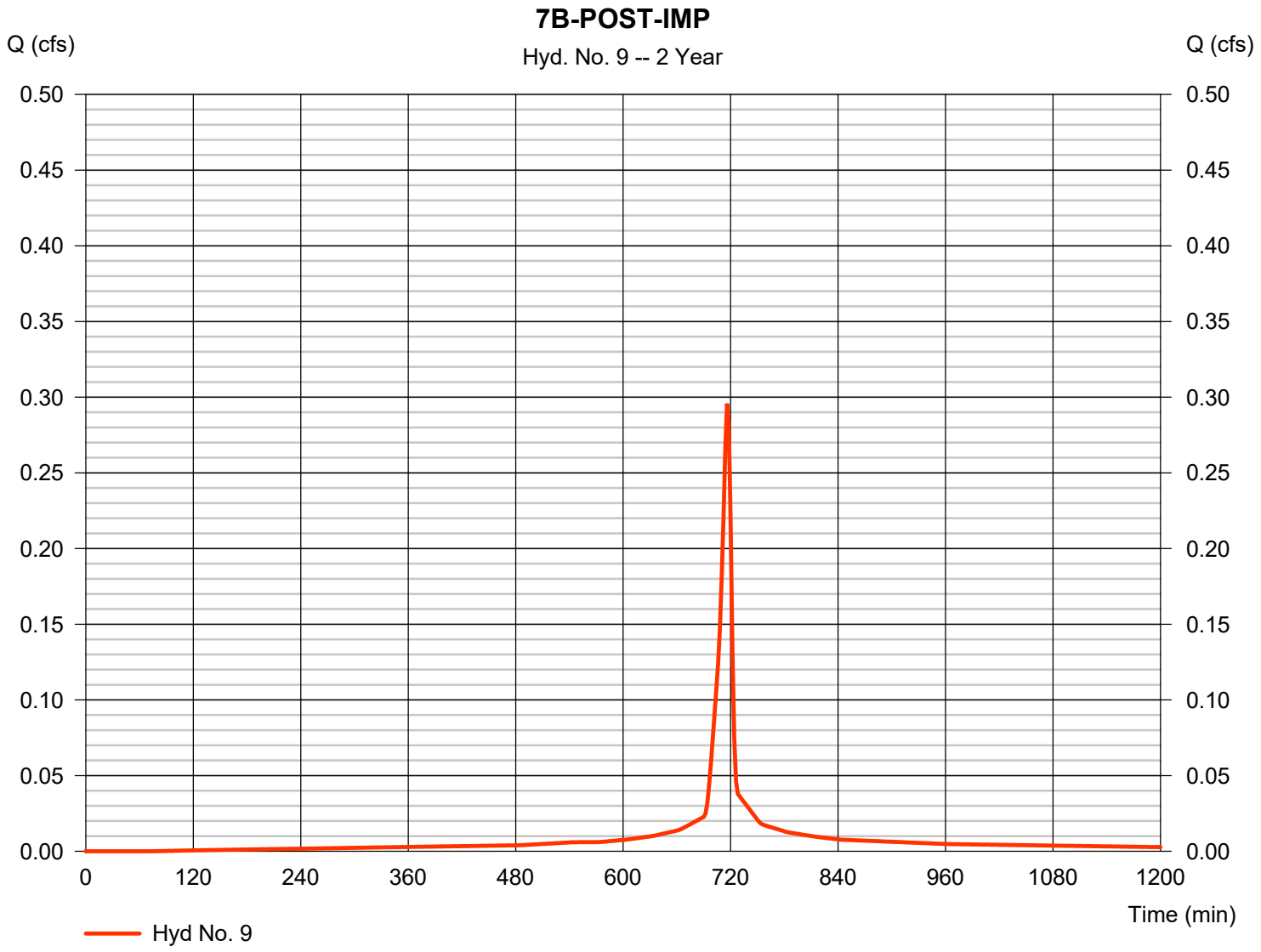
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 9

7B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.296 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 693 cuft
Drainage area	= 0.067 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



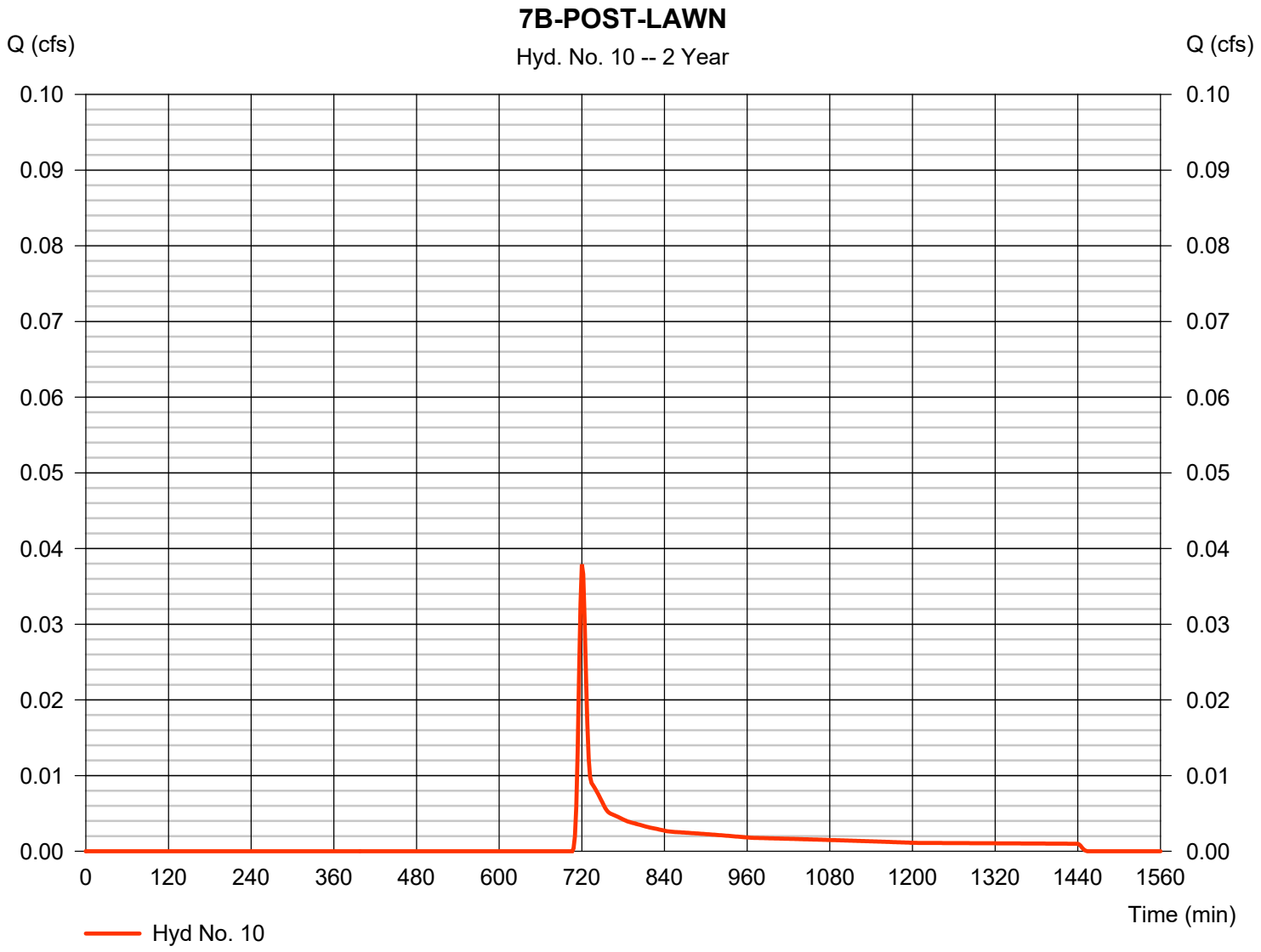
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 10

7B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.038 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 112 cuft
Drainage area	= 0.065 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



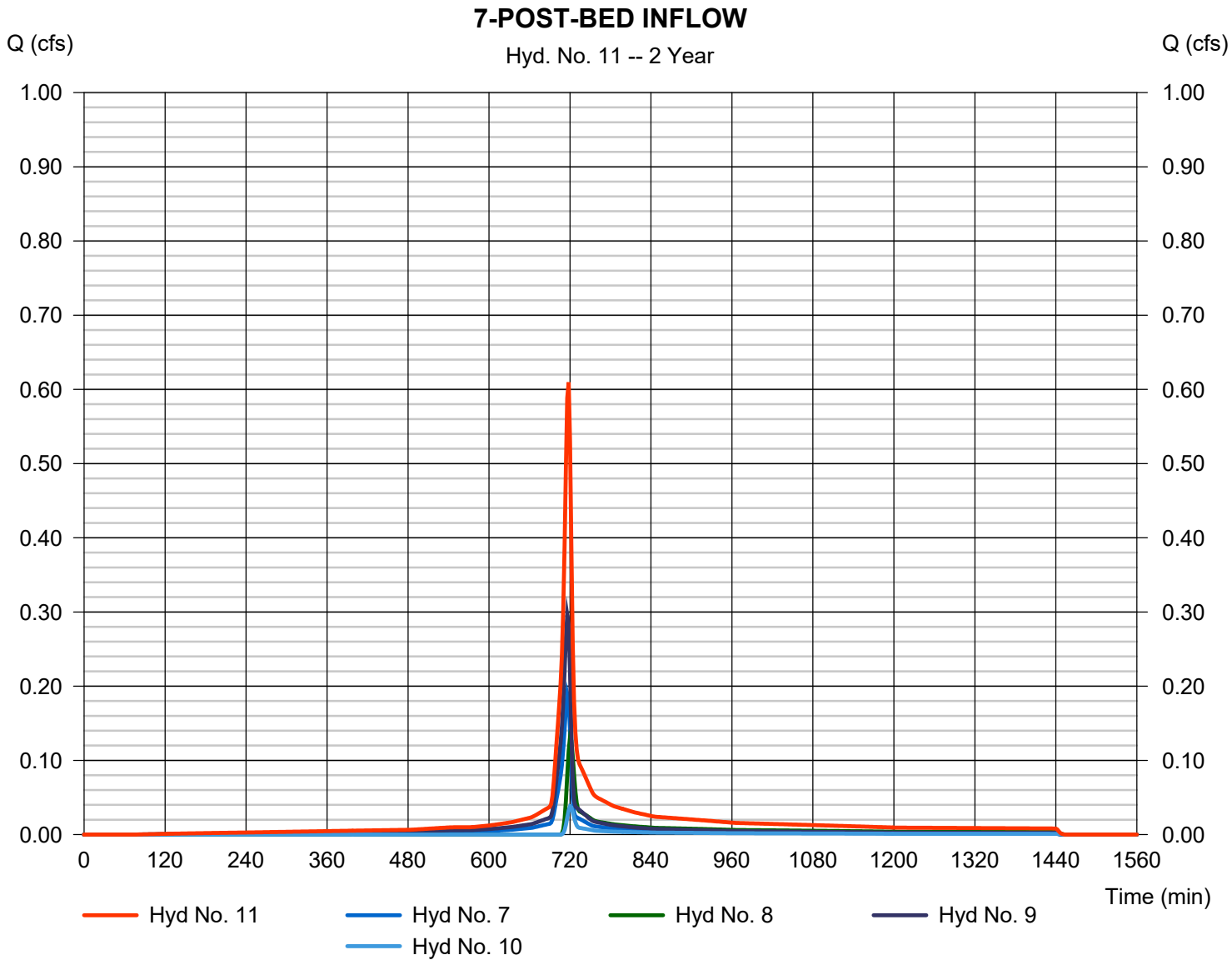
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 11

7-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.610 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 1,635 cuft
Inflow hyds.	= 7, 8, 9, 10	Contrib. drain. area	= 0.400 ac



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

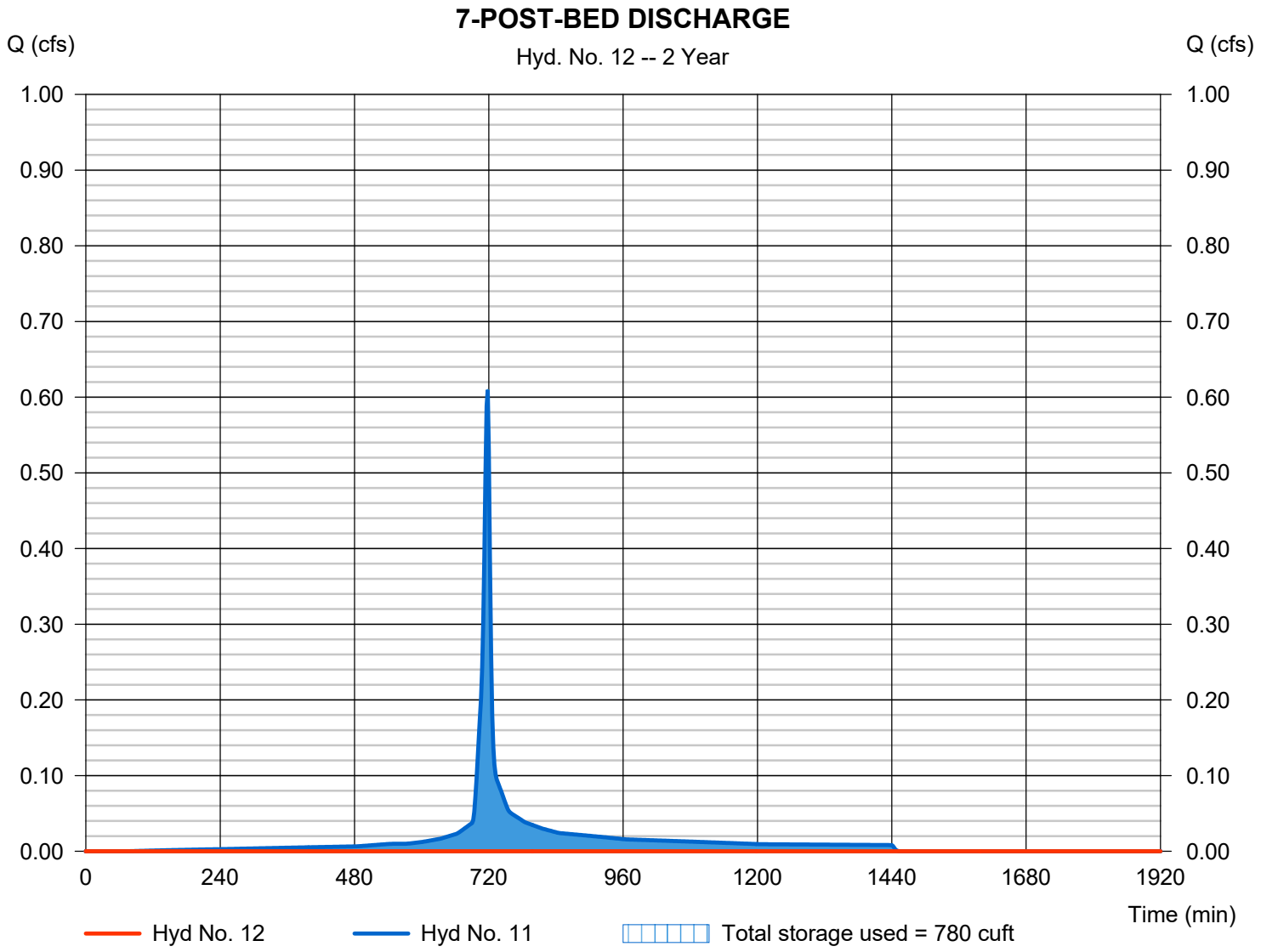
Monday, 12 / 7 / 2020

Hyd. No. 12

7-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	326 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	11 - 7-POST-BED INFLOW	Max. Elevation	=	380.71 ft
Reservoir name	=	LOT 7 INFILTRATION BED	Max. Storage	=	780 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 2 - LOT 7 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 379.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 40.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	379.00	n/a	0	0
0.40	379.40	n/a	99	99
0.80	379.80	n/a	173	272
1.20	380.20	n/a	210	482
1.60	380.60	n/a	231	714
2.00	381.00	n/a	242	955
2.40	381.40	n/a	242	1,197
2.80	381.80	n/a	231	1,429
3.20	382.20	n/a	210	1,638
3.60	382.60	n/a	173	1,811
4.00	383.00	n/a	99	1,910

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 381.50	0.00	0.00	0.00
Length (ft)	= 138.00	0.00	0.00	0.00
Slope (%)	= 2.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

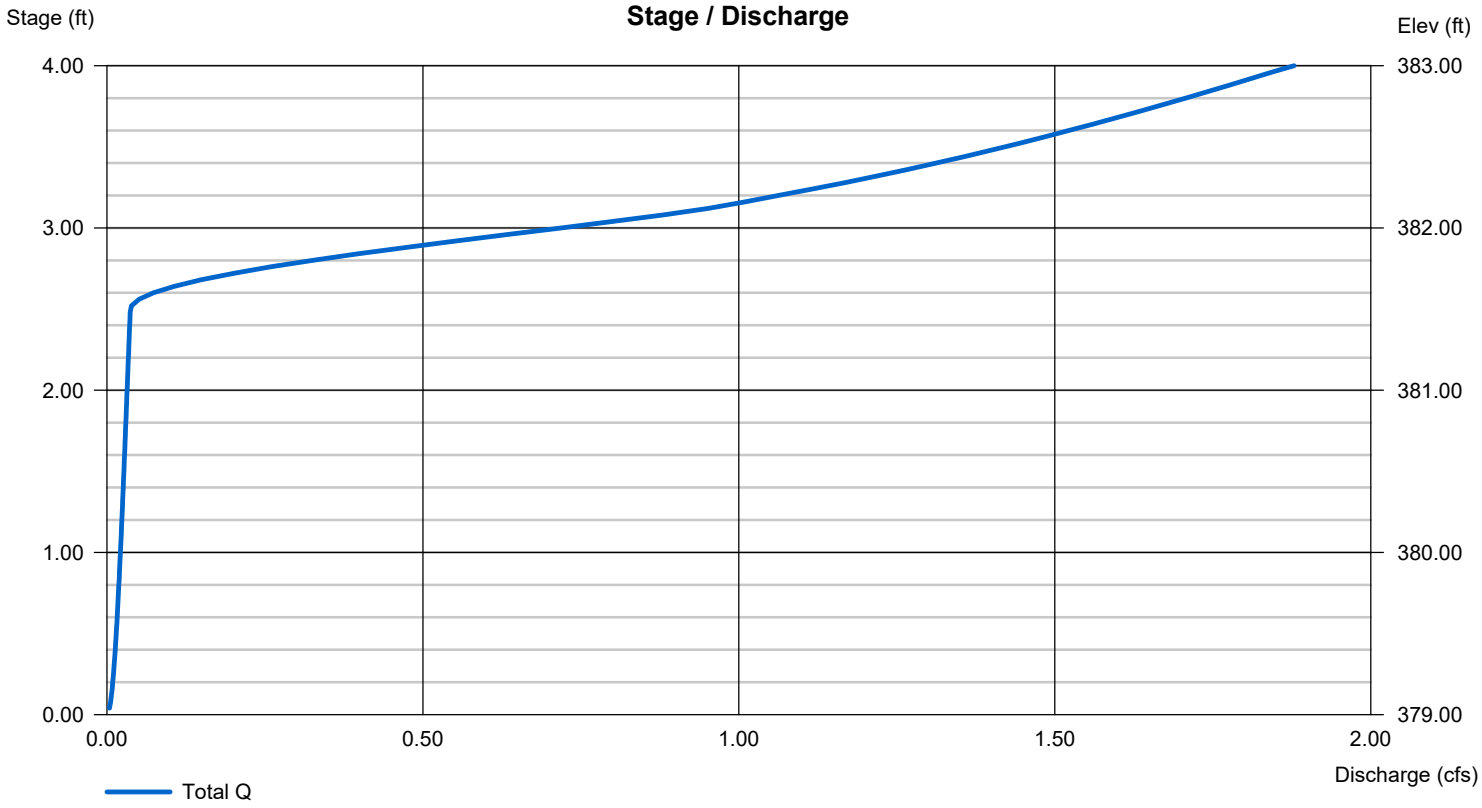
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.440 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



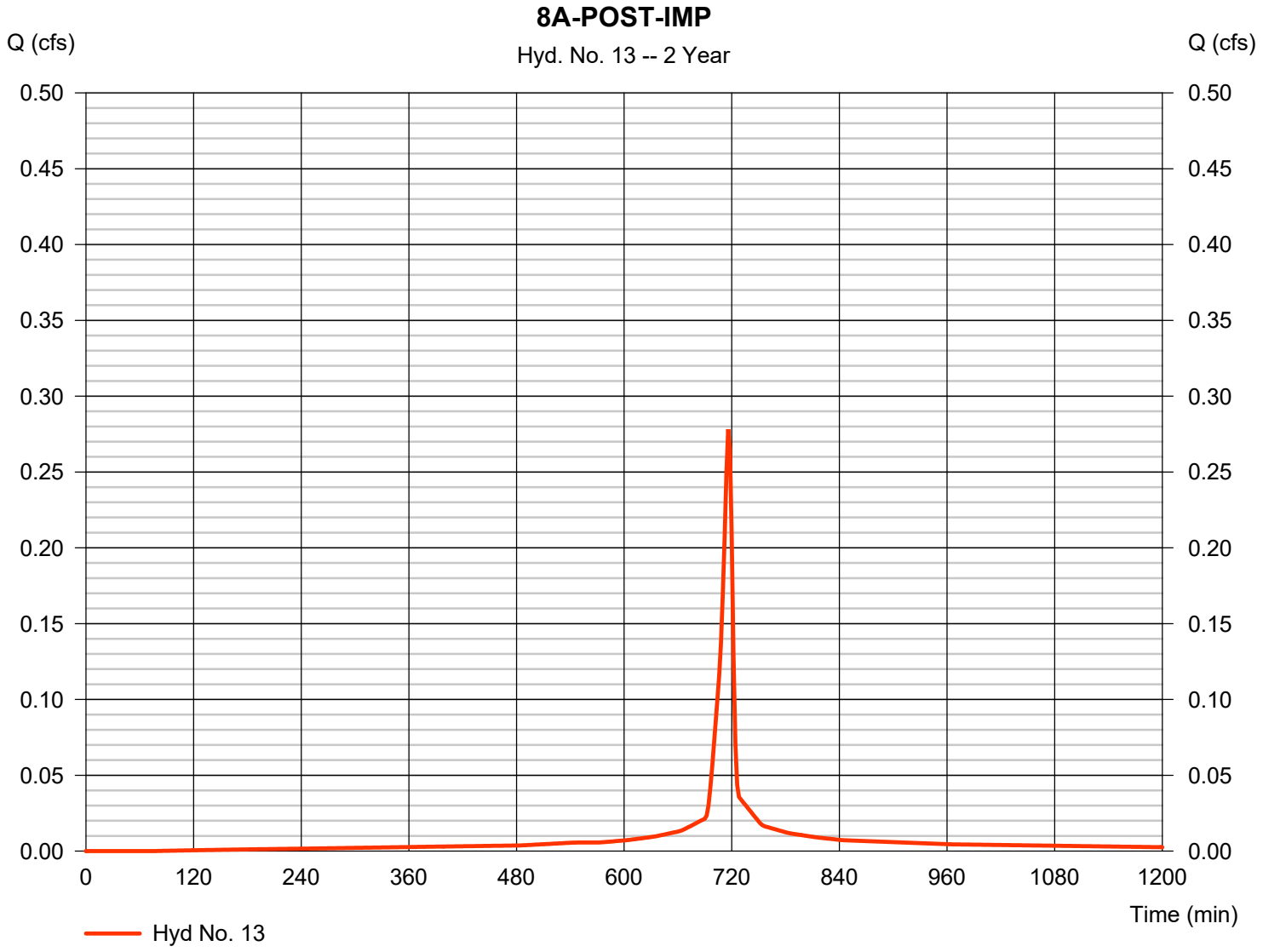
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 13

8A-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.278 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	651 cuft
Drainage area	=	0.063 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



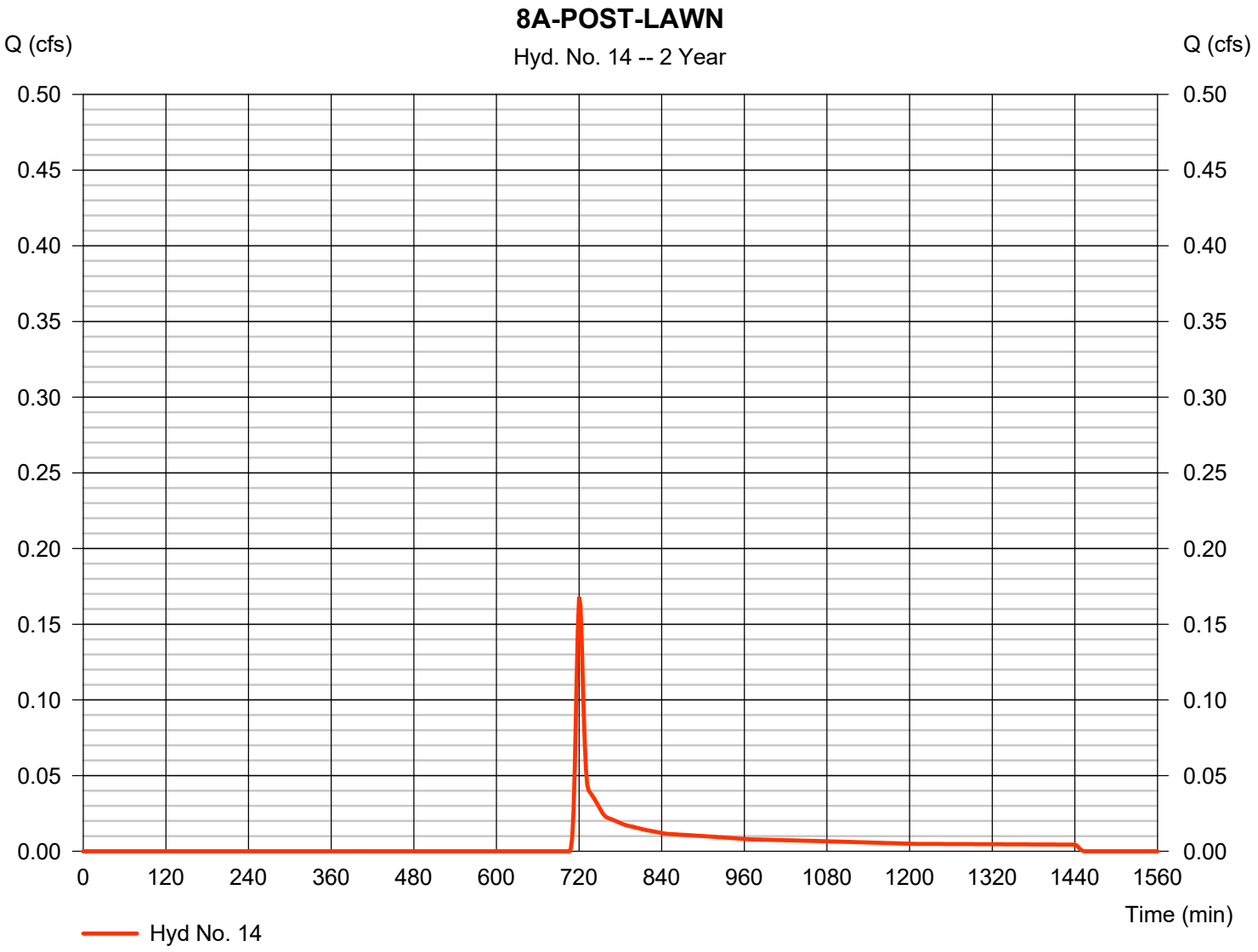
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 14

8A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.168 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 494 cuft
Drainage area	= 0.288 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



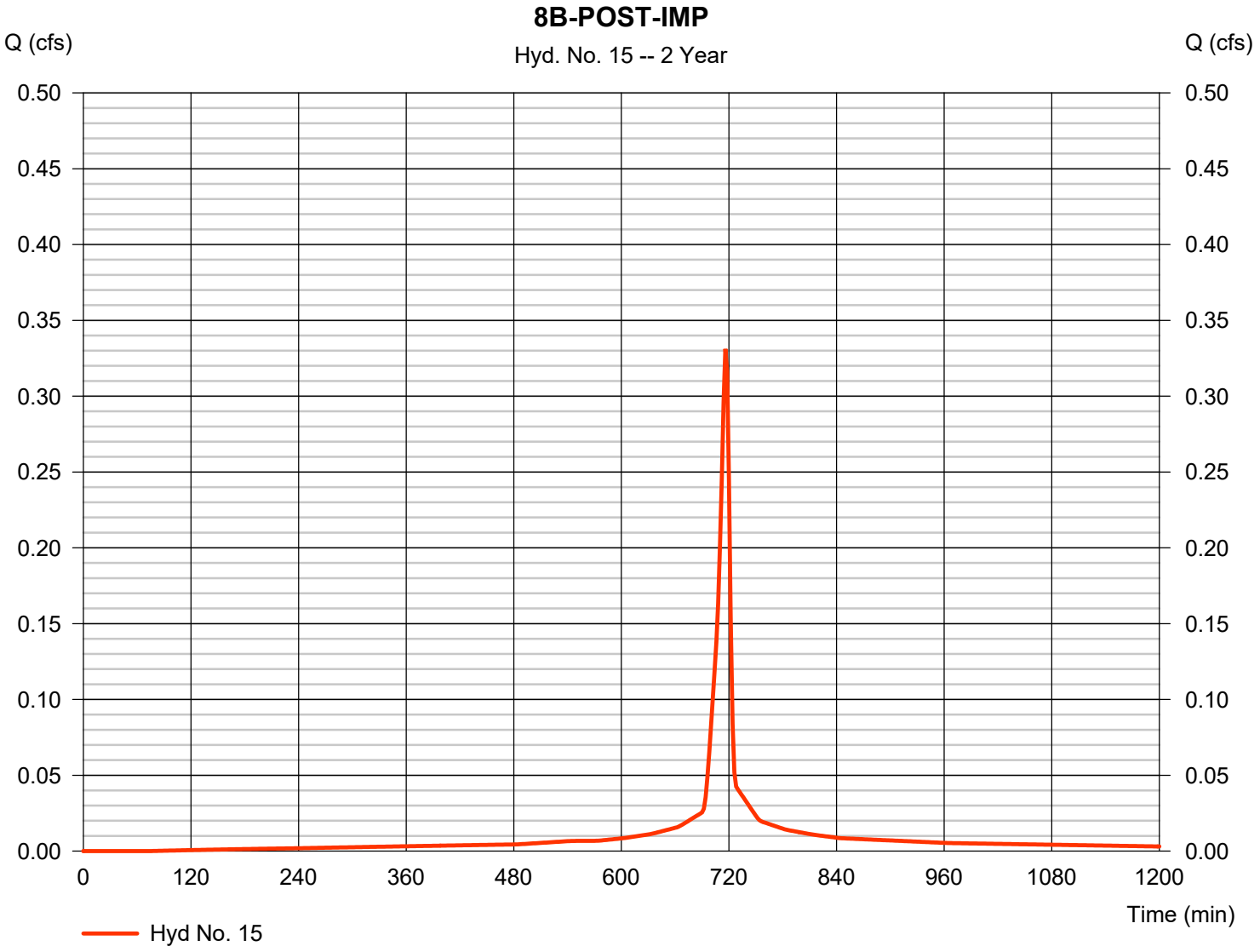
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 15

8B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.331 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 775 cuft
Drainage area	= 0.075 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



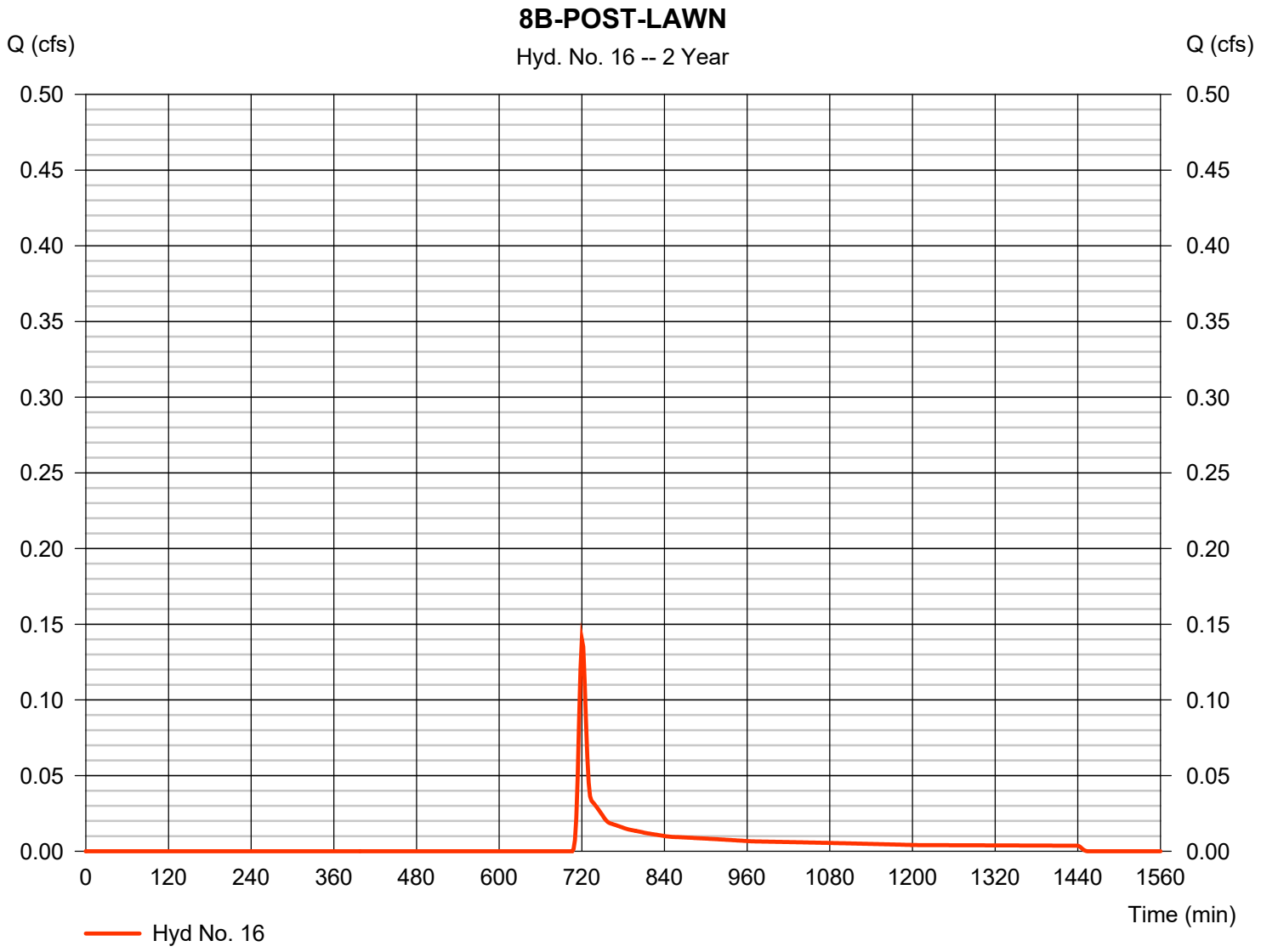
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 16

8B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.140 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 412 cuft
Drainage area	= 0.240 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



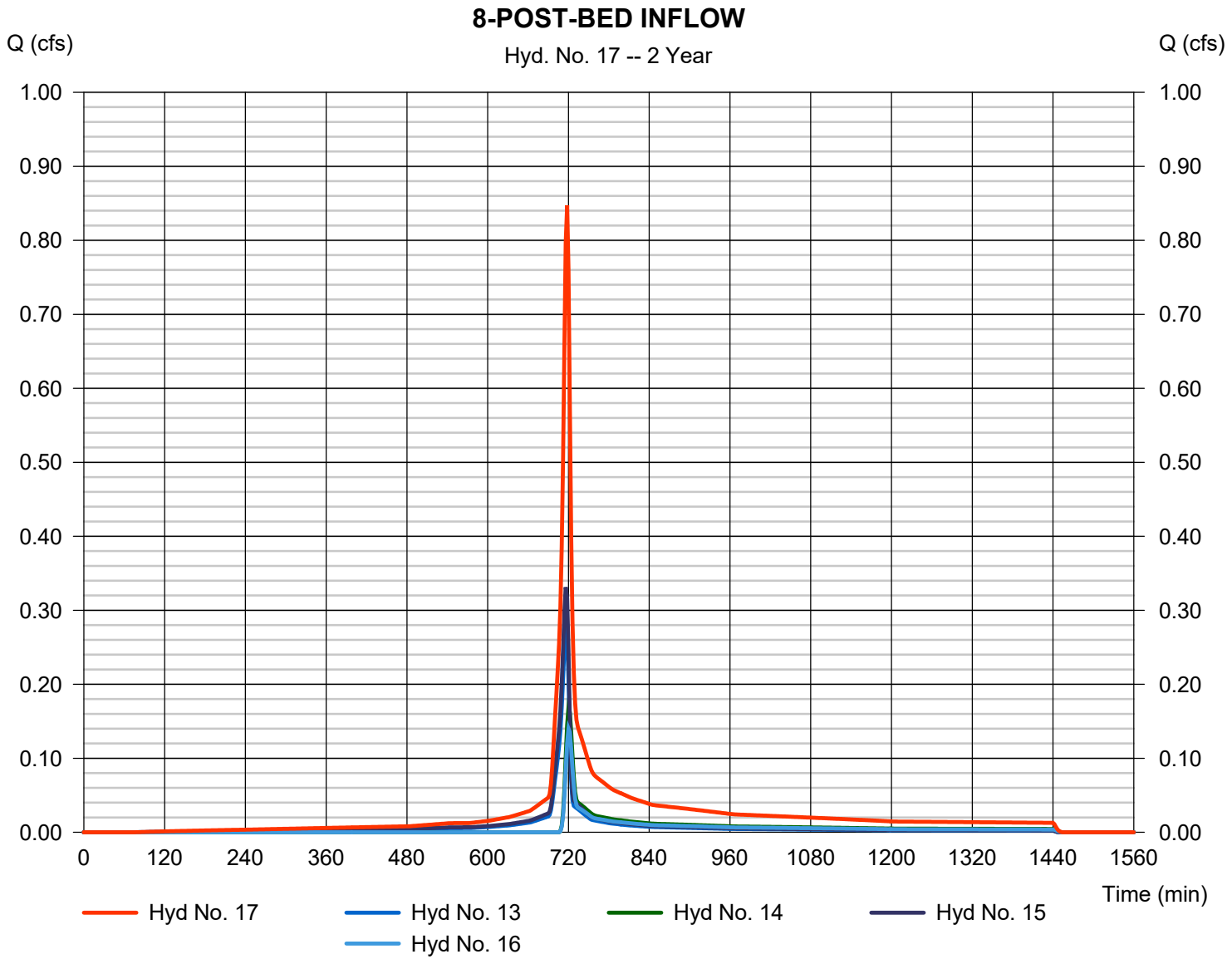
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 17

8-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	0.847 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,333 cuft
Inflow hyds.	=	13, 14, 15, 16	Contrib. drain. area	=	0.666 ac



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

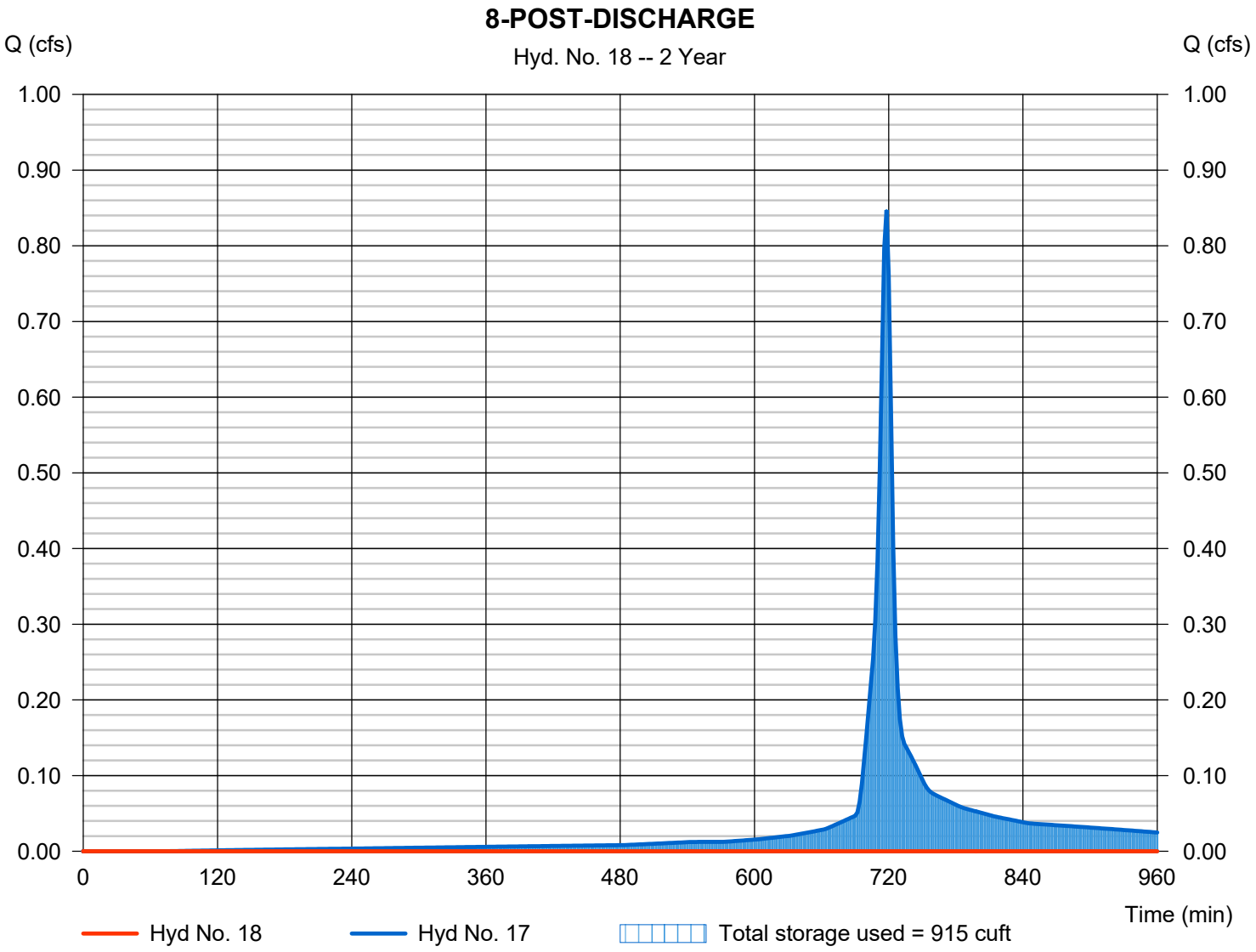
Monday, 12 / 7 / 2020

Hyd. No. 18

8-POST-DISCHARGE

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 742 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 17 - 8-POST-BED INFLOW	Max. Elevation	= 377.10 ft
Reservoir name	= LOT 8 INFILTRATION BED	Max. Storage	= 915 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 3 - LOT 8 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 376.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 70.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	376.00	n/a	0	0
0.40	376.40	n/a	212	212
0.80	376.80	n/a	368	580
1.20	377.20	n/a	448	1,028
1.60	377.60	n/a	493	1,521
2.00	378.00	n/a	515	2,037
2.40	378.40	n/a	515	2,552
2.80	378.80	n/a	493	3,045
3.20	379.20	n/a	448	3,493
3.60	379.60	n/a	368	3,861
4.00	380.00	n/a	212	4,072

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 379.00	0.00	0.00	0.00
Length (ft)	= 5.00	0.00	0.00	0.00
Slope (%)	= 5.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

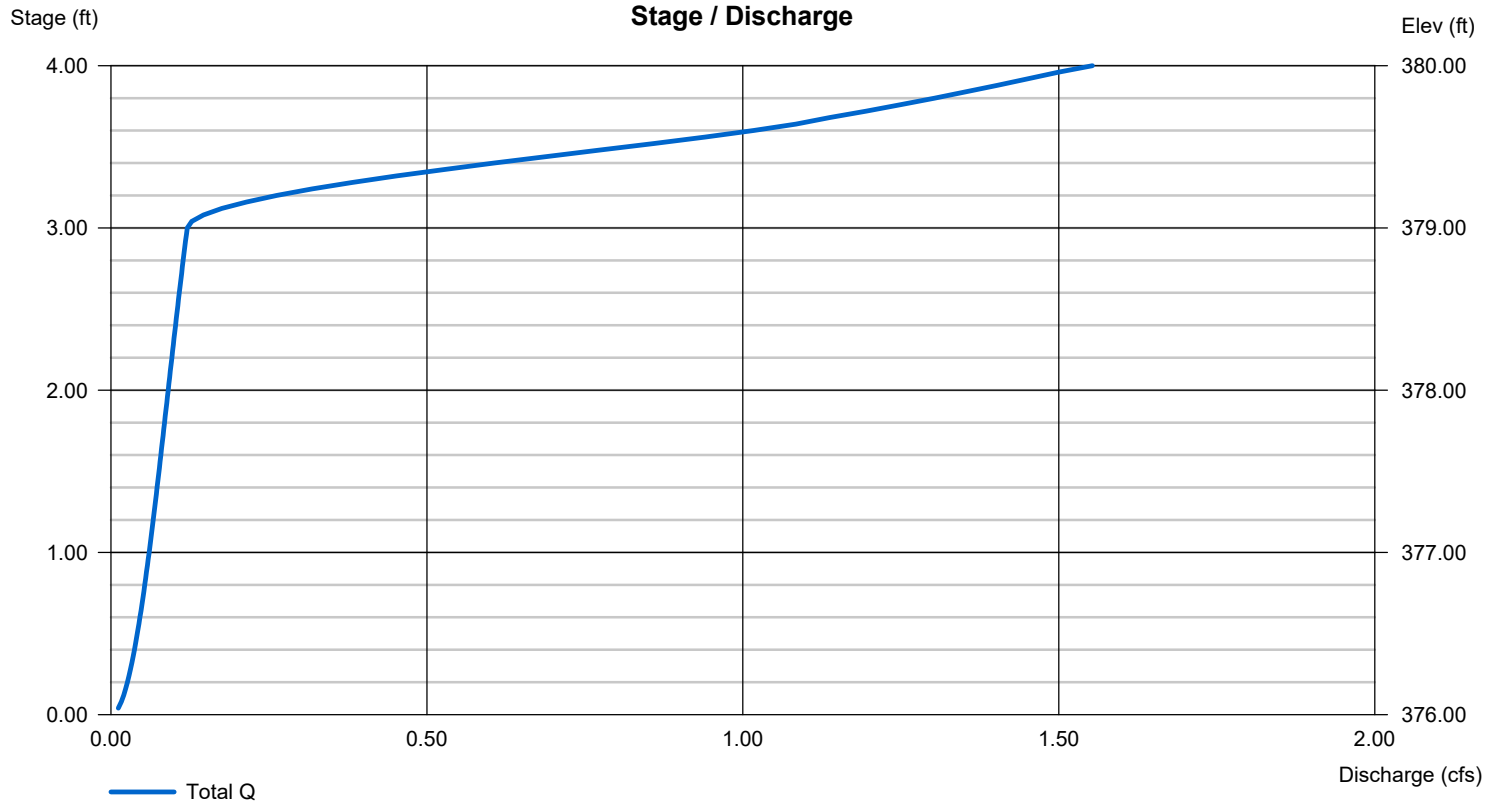
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.920 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



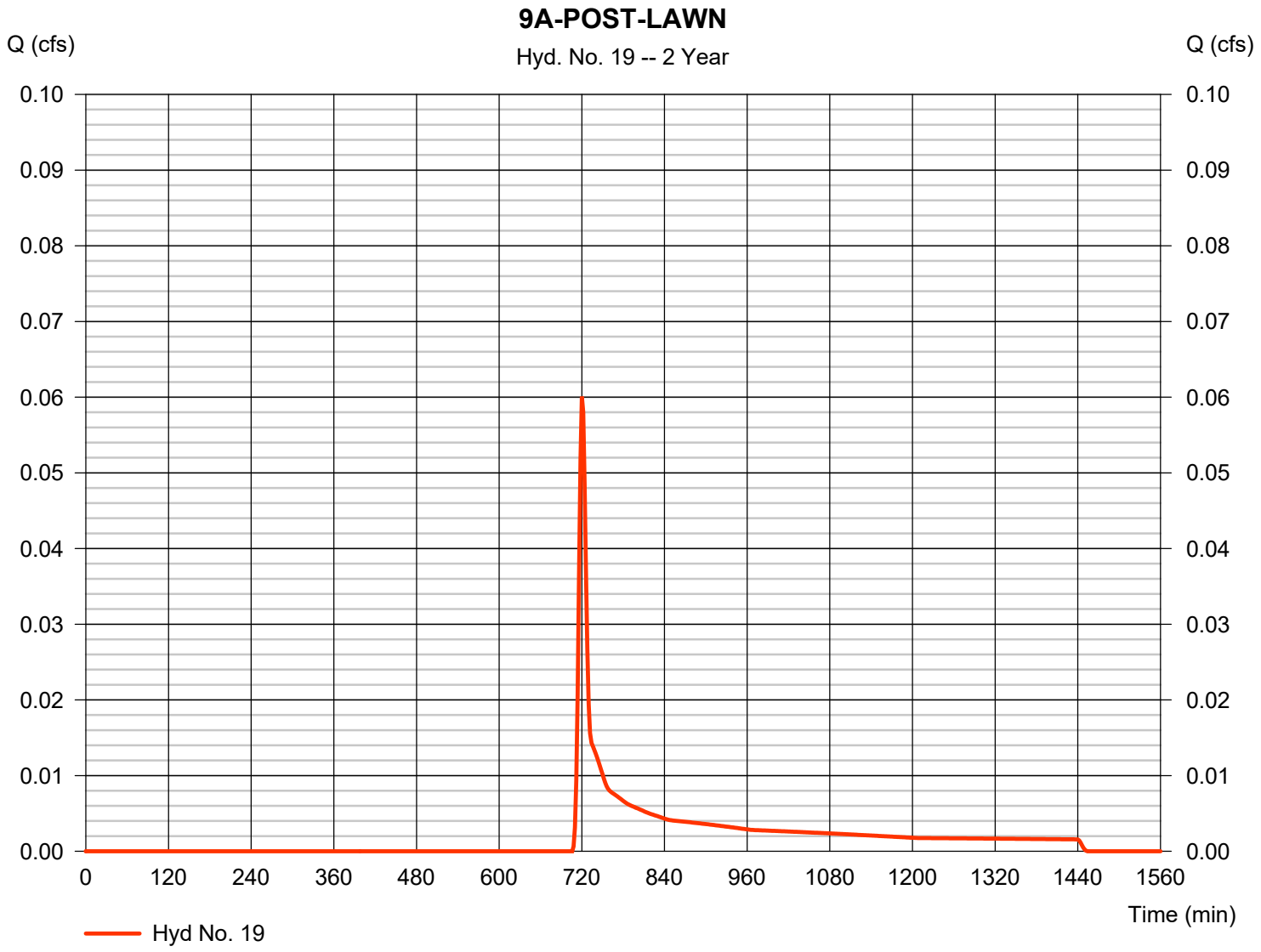
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 19

9A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.060 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 177 cuft
Drainage area	= 0.103 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



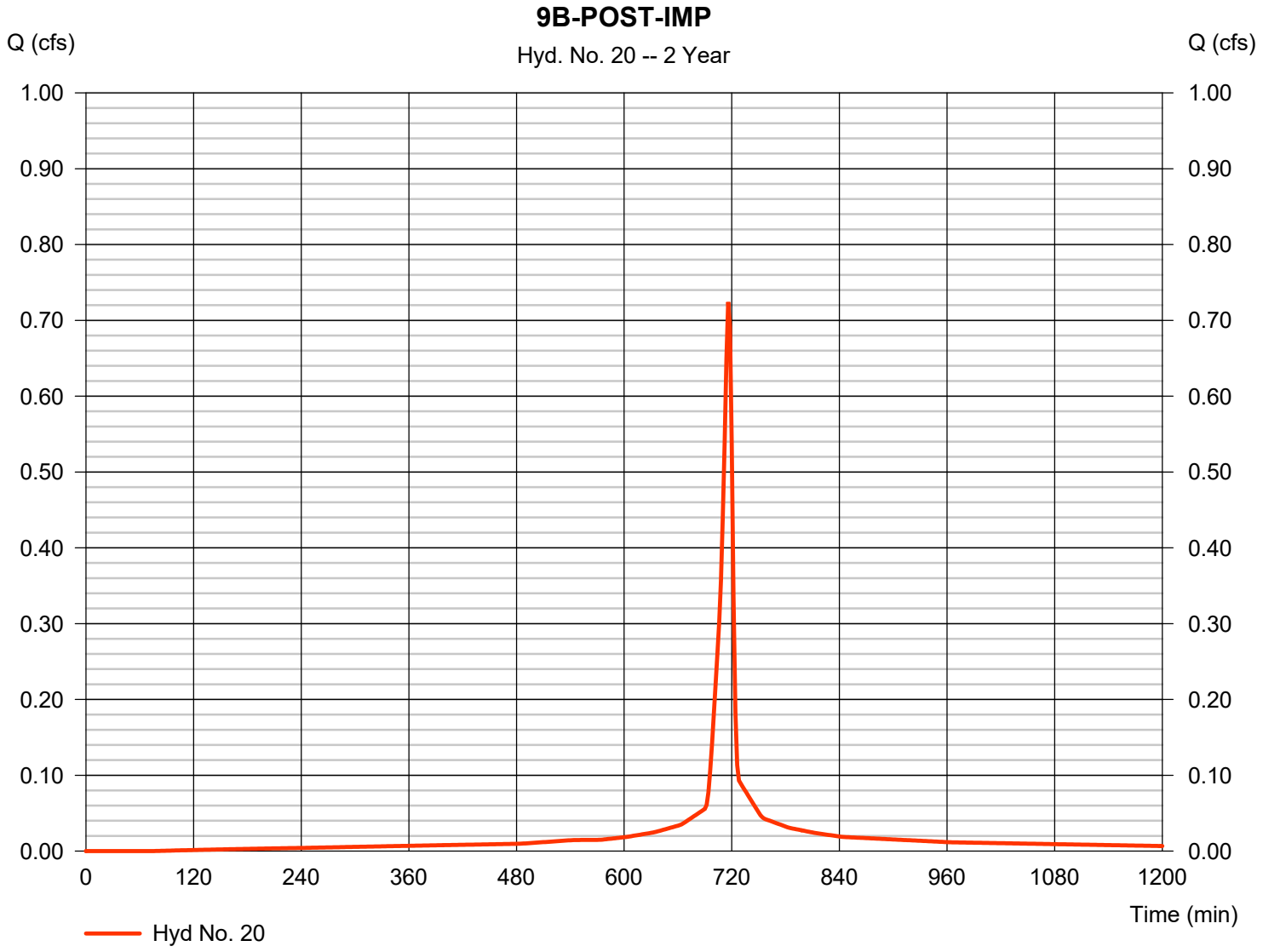
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 20

9B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.724 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,695 cuft
Drainage area	= 0.164 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



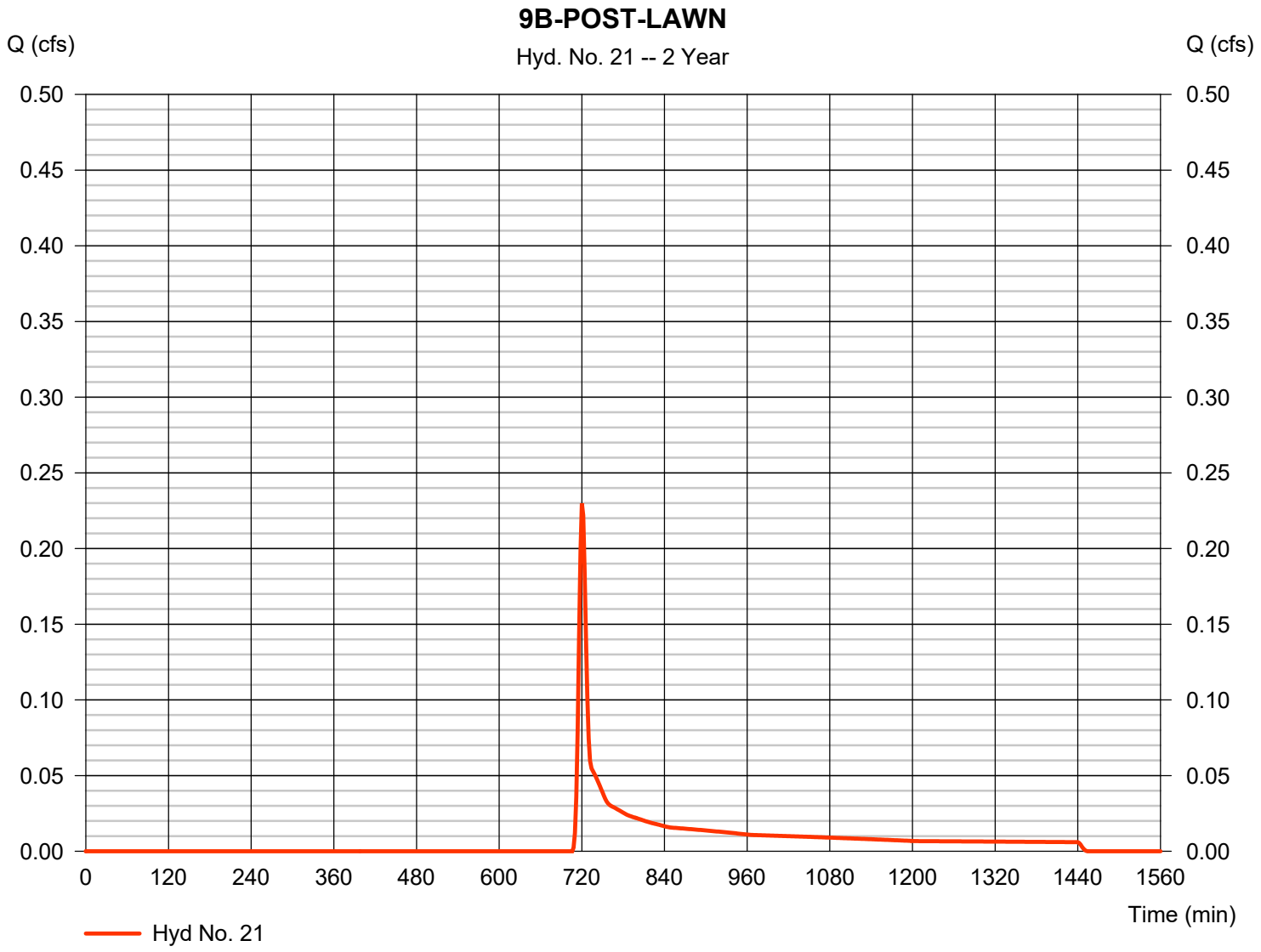
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 21

9B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.230 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 676 cuft
Drainage area	= 0.394 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



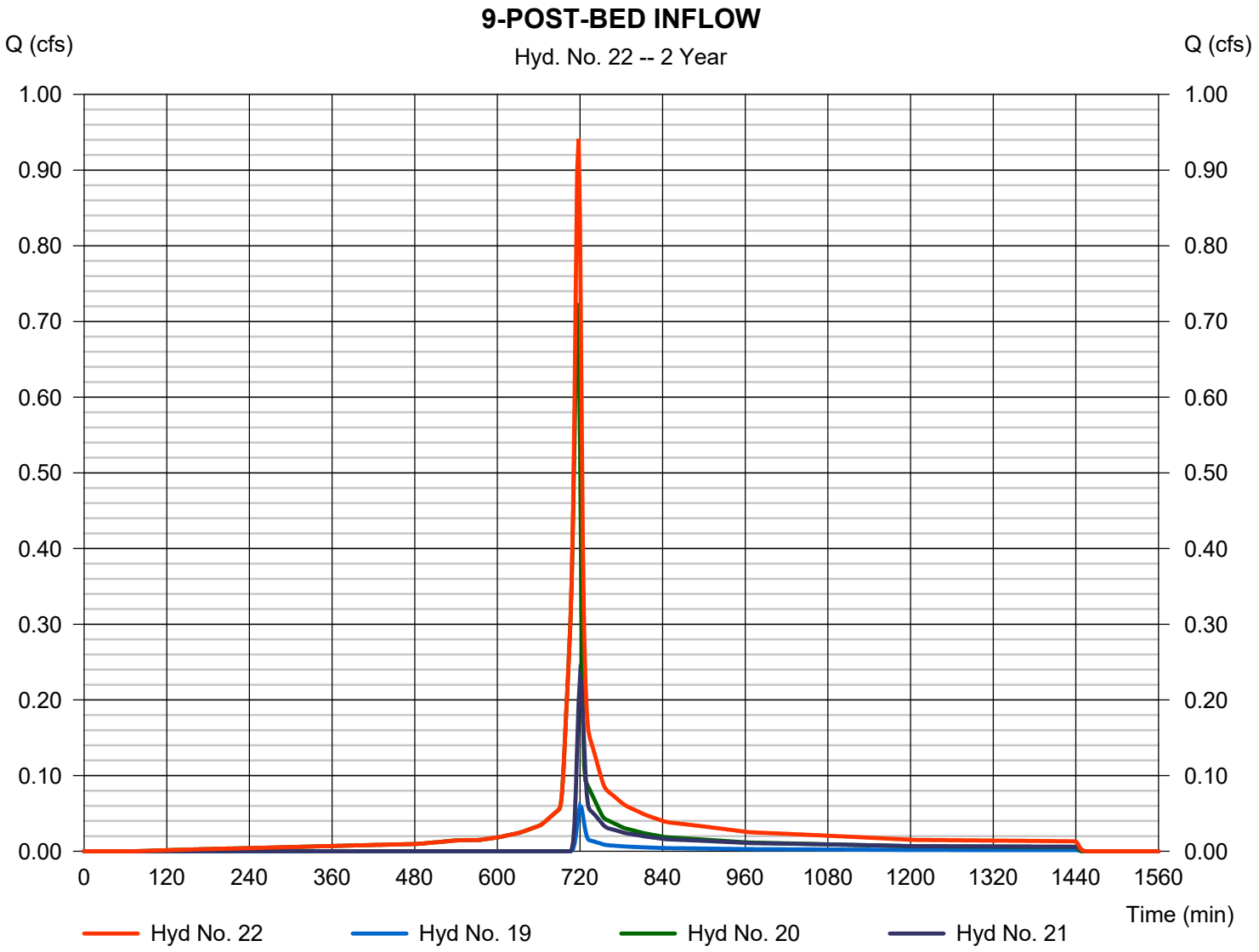
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 22

9-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.941 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,548 cuft
Inflow hyds.	= 19, 20, 21	Contrib. drain. area	= 0.661 ac



Hydrograph Report

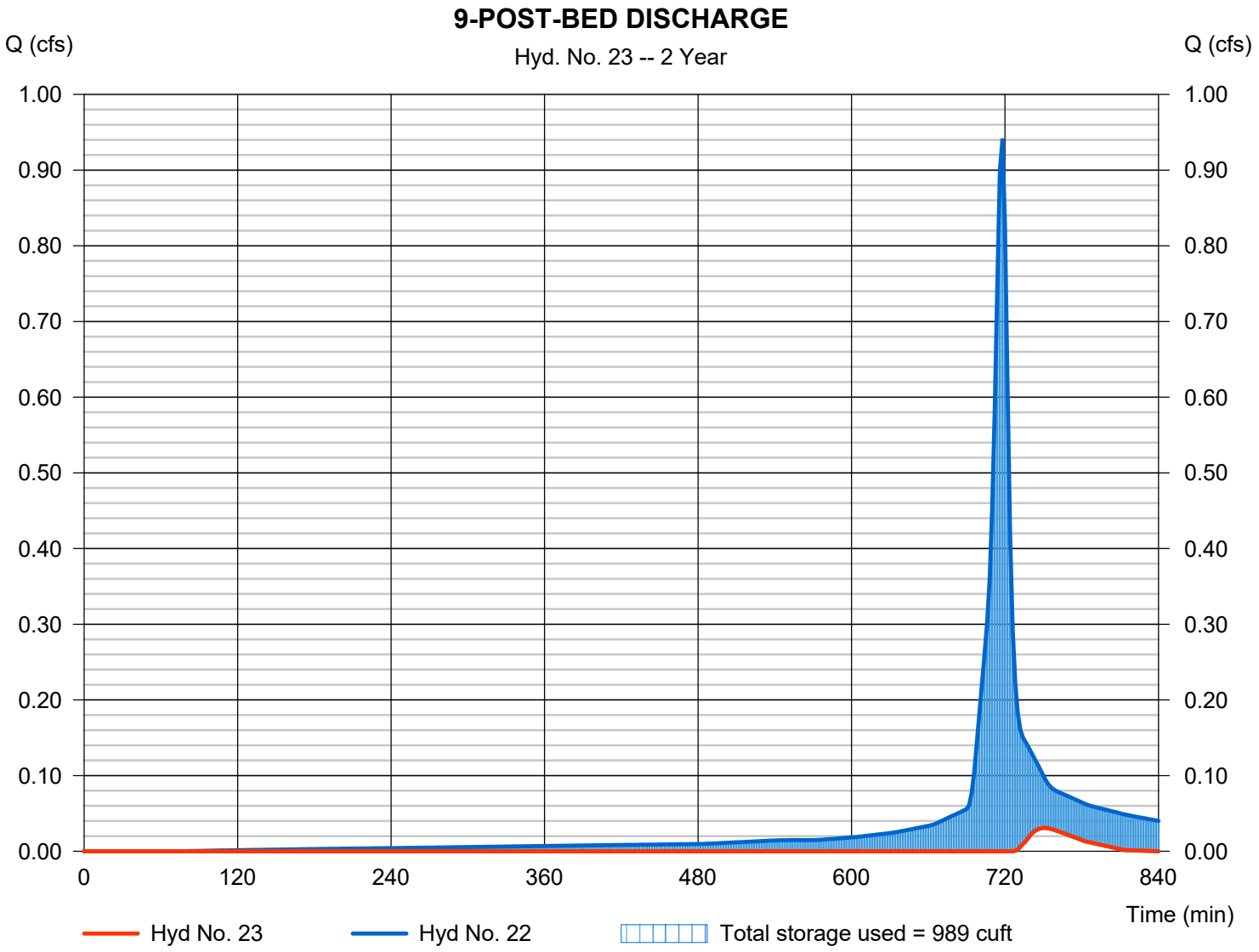
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 23

9-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.031 cfs
Storm frequency	=	2 yrs	Time to peak	=	750 min
Time interval	=	2 min	Hyd. volume	=	84 cuft
Inflow hyd. No.	=	22 - 9-POST-BED INFLOW	Max. Elevation	=	371.59 ft
Reservoir name	=	LOT 9 INFILTRATION BED	Max. Storage	=	989 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 4 - LOT 9 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 370.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	370.00	n/a	0	0
0.40	370.40	n/a	139	139
0.80	370.80	n/a	241	380
1.20	371.20	n/a	293	673
1.60	371.60	n/a	323	995
2.00	372.00	n/a	337	1,333
2.40	372.40	n/a	337	1,670
2.80	372.80	n/a	323	1,992
3.20	373.20	n/a	293	2,285
3.60	373.60	n/a	241	2,526
4.00	374.00	n/a	138	2,665

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 371.50	0.00	0.00	0.00
Length (ft)	= 48.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

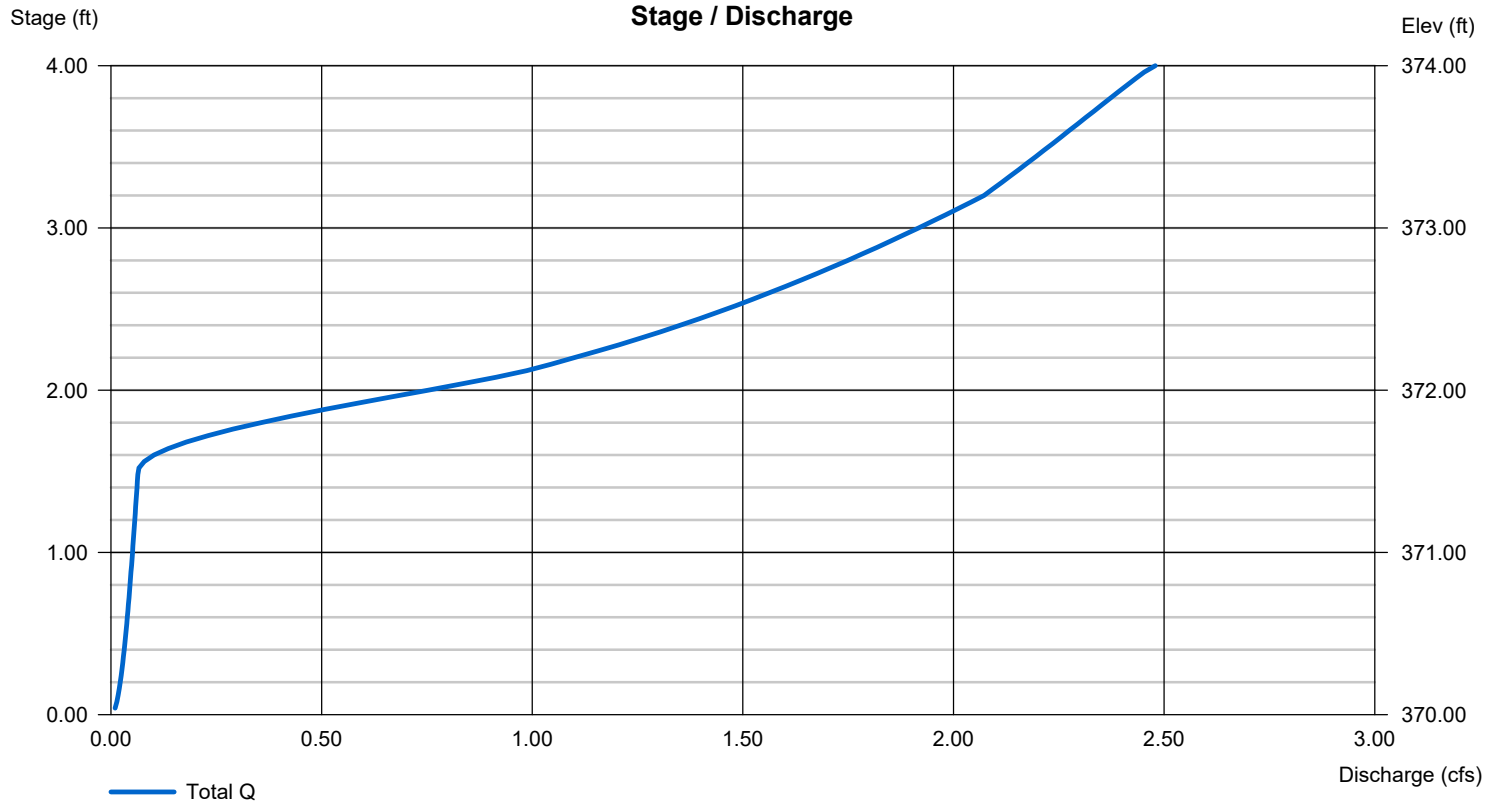
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 2.480 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



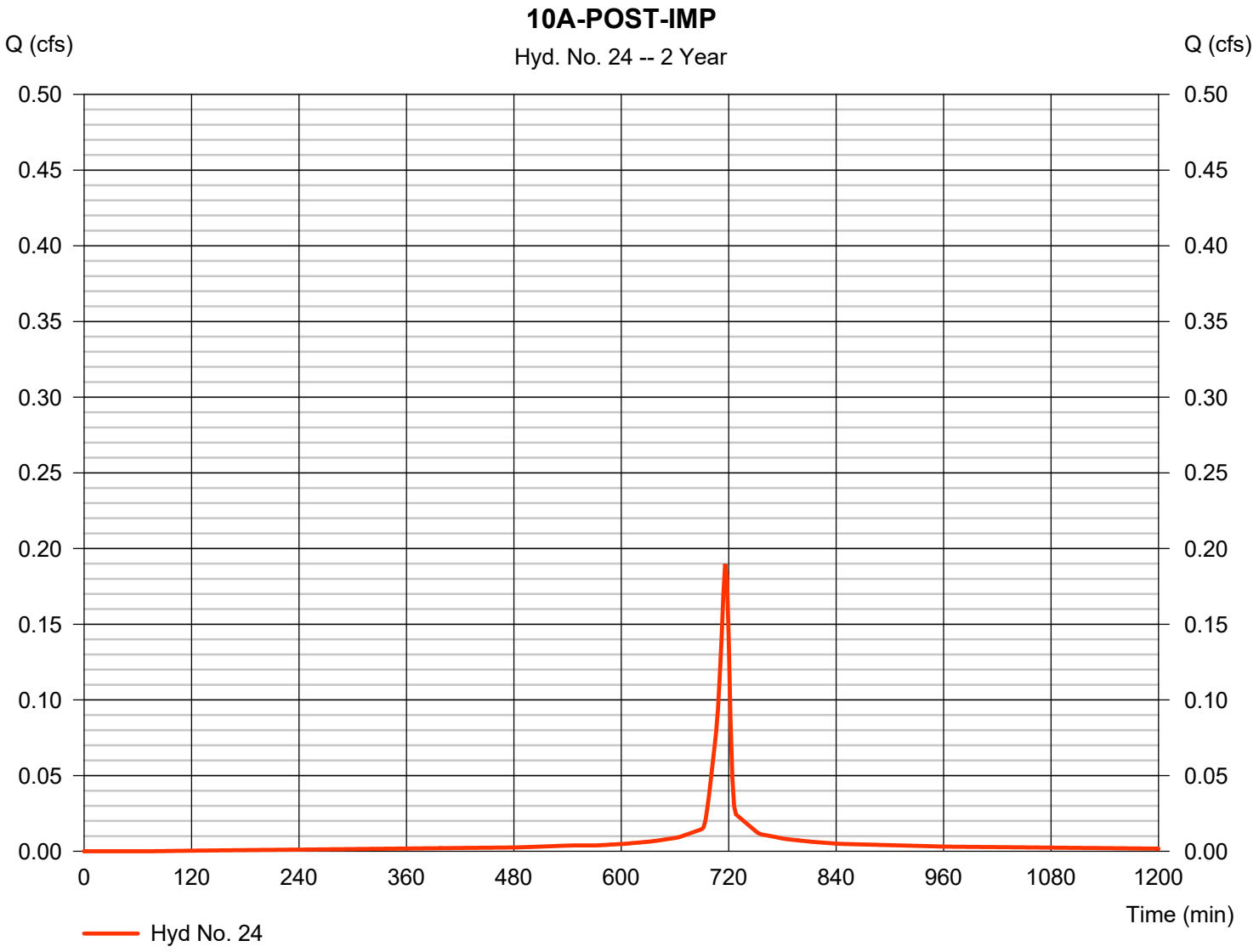
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 24

10A-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.190 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	444 cuft
Drainage area	=	0.043 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



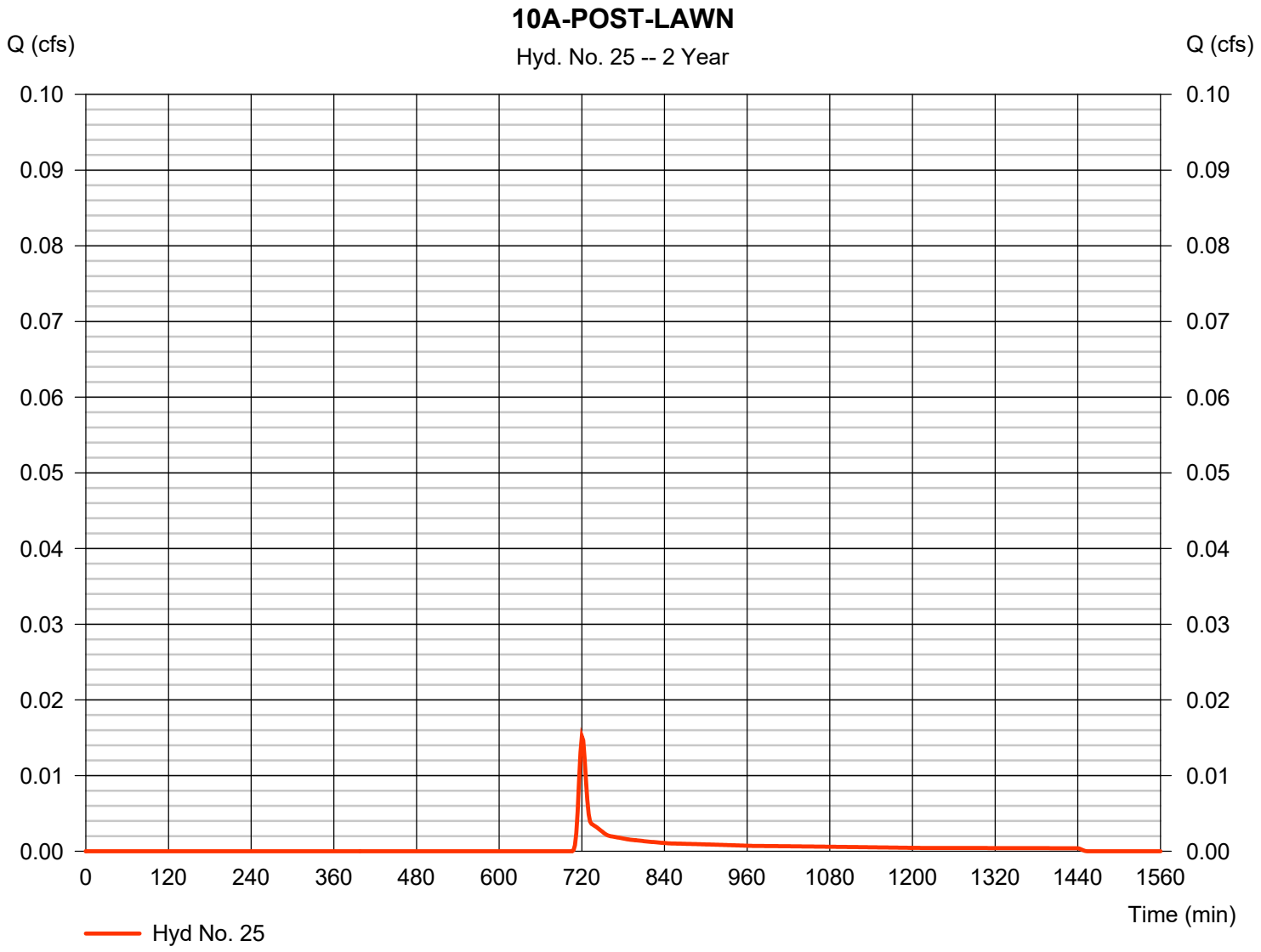
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 25

10A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.015 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 45 cuft
Drainage area	= 0.026 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



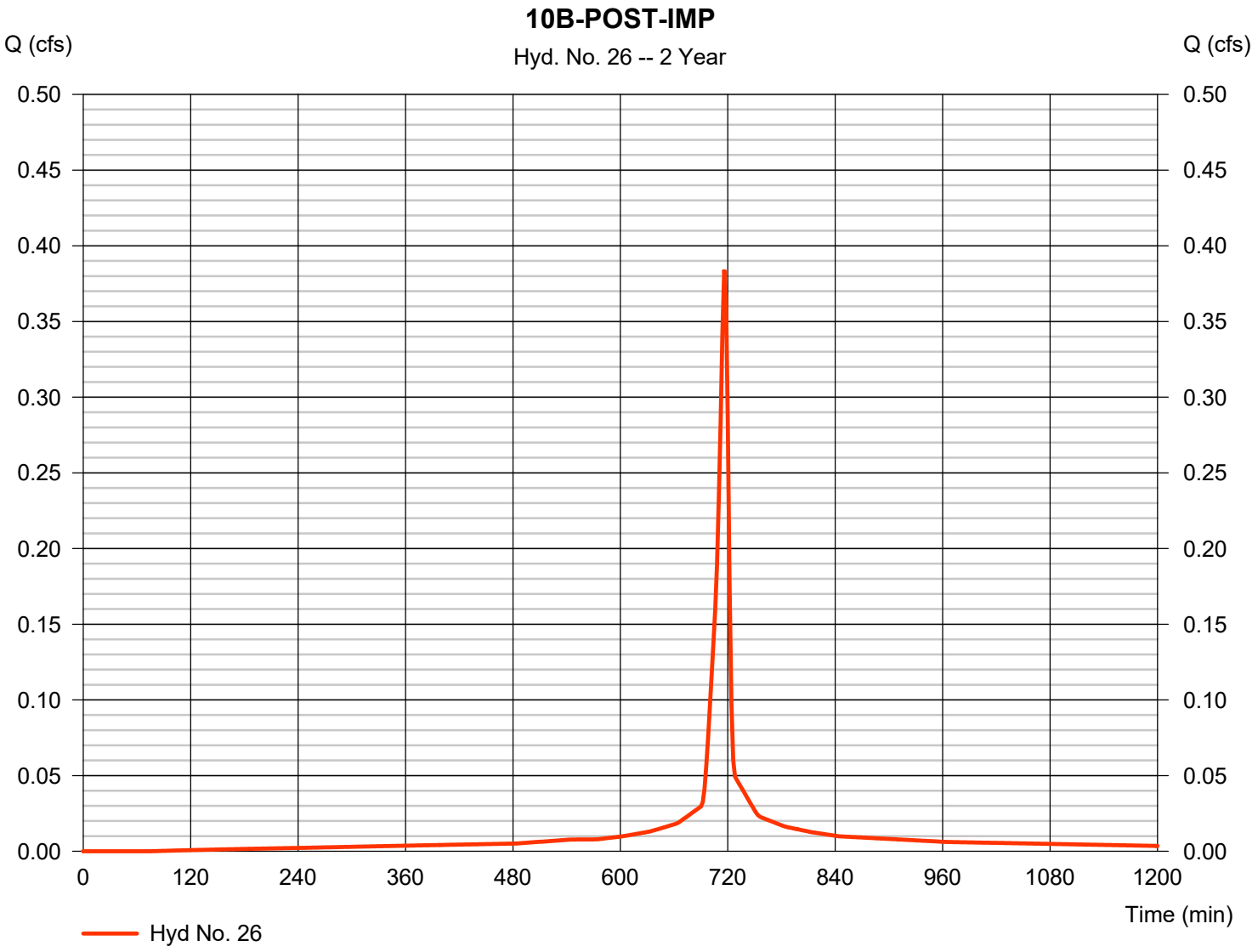
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 26

10B-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.384 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	899 cuft
Drainage area	=	0.087 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



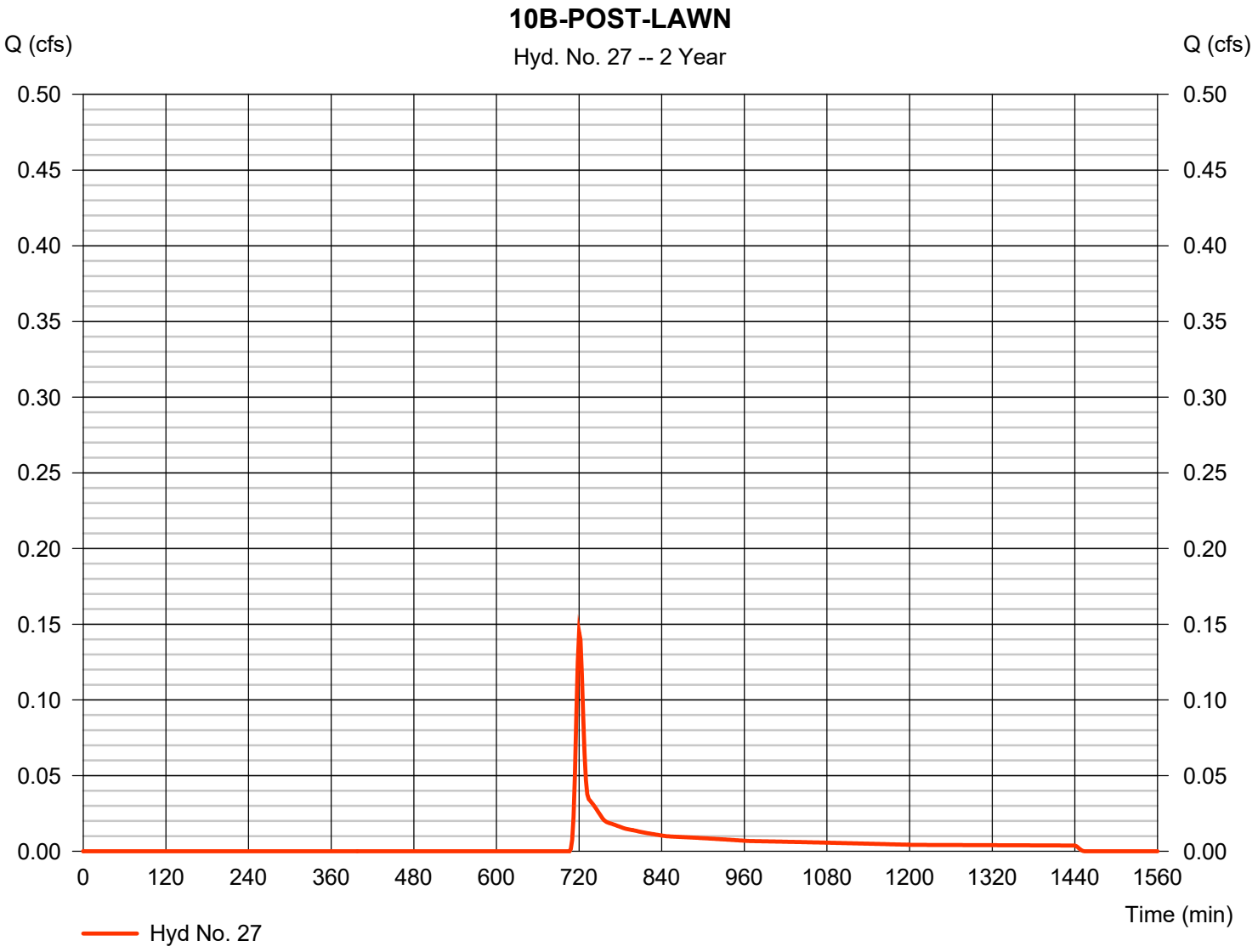
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 27

10B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.145 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 426 cuft
Drainage area	= 0.248 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



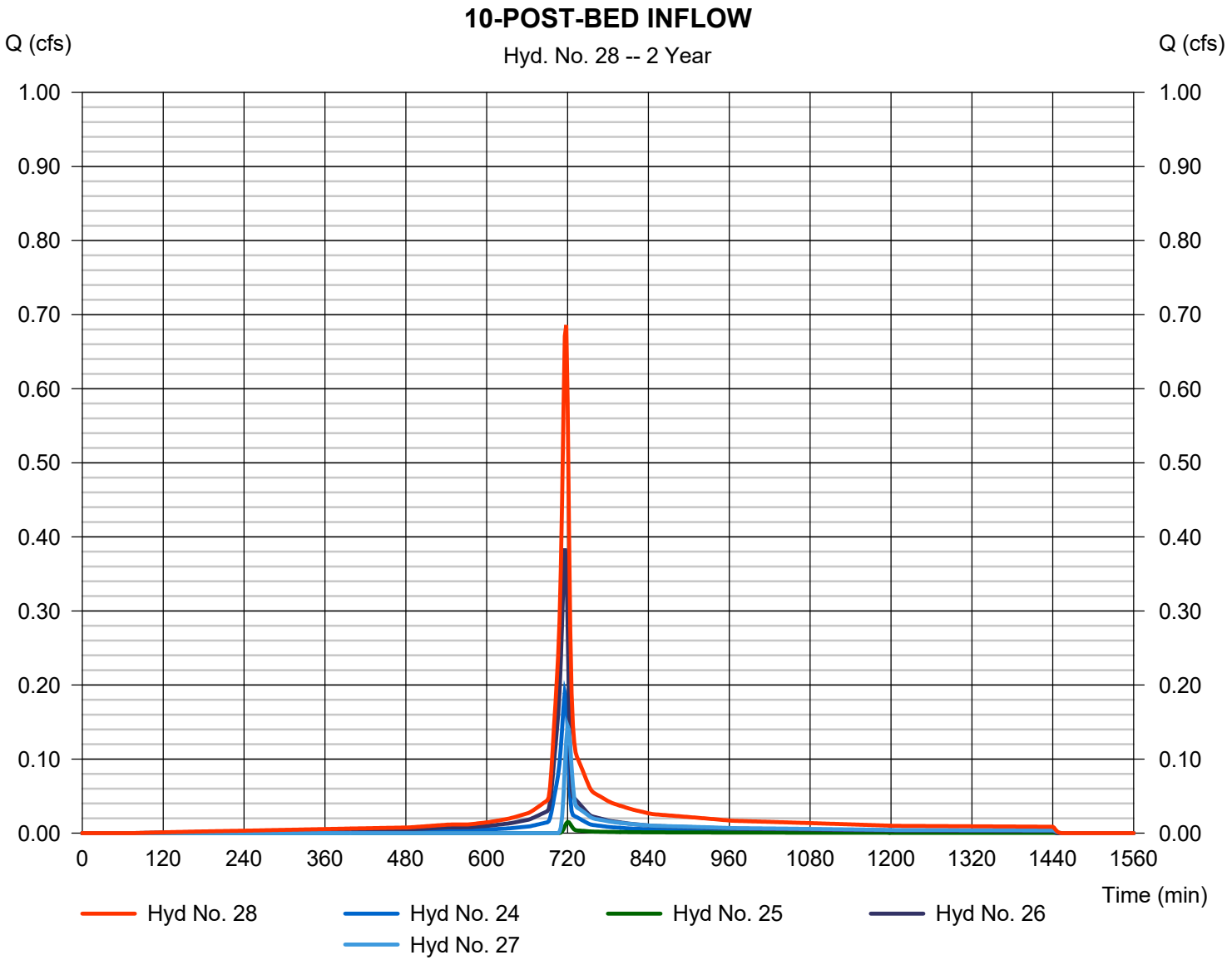
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 28

10-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	0.686 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	1,814 cuft
Inflow hyds.	=	24, 25, 26, 27	Contrib. drain. area	=	0.404 ac



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

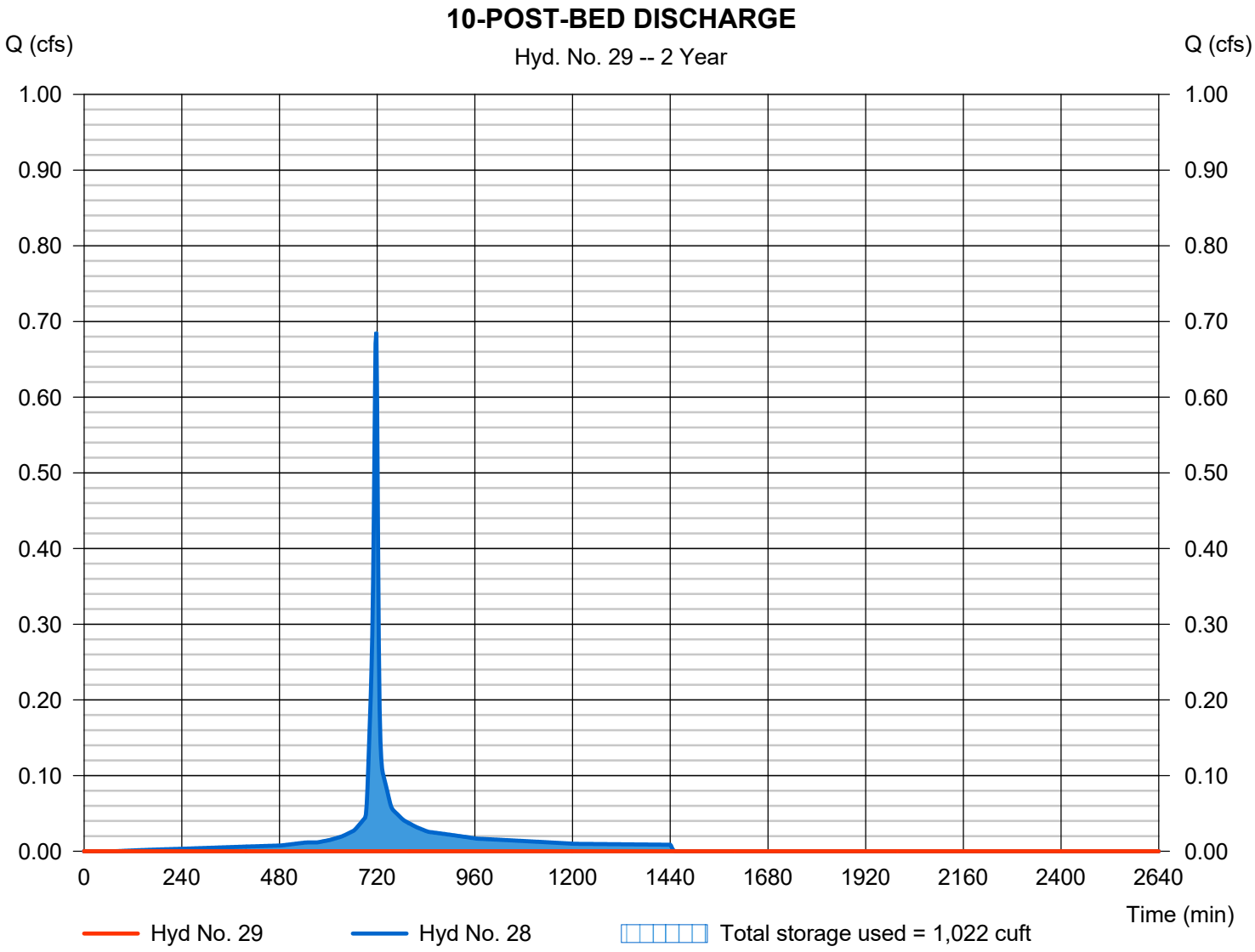
Monday, 12 / 7 / 2020

Hyd. No. 29

10-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	436 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	28 - 10-POST-BED INFLOW	Max. Elevation	=	368.48 ft
Reservoir name	=	LOT 10 INFILTRATION BED	Max. Storage	=	1,022 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Thursday, 12 / 10 / 2020

Pond No. 5 - LOT 10 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 367.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 70.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	367.00	n/a	0	0
0.40	367.40	n/a	158	158
0.80	367.80	n/a	275	433
1.20	368.20	n/a	334	768
1.60	368.60	n/a	368	1,136
2.00	369.00	n/a	385	1,521
2.40	369.40	n/a	385	1,906
2.80	369.80	n/a	368	2,274
3.20	370.20	n/a	334	2,609
3.60	370.60	n/a	275	2,884
4.00	371.00	n/a	158	3,042

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 370.00	0.00	0.00	0.00
Length (ft)	= 26.70	0.00	0.00	0.00
Slope (%)	= 4.10	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

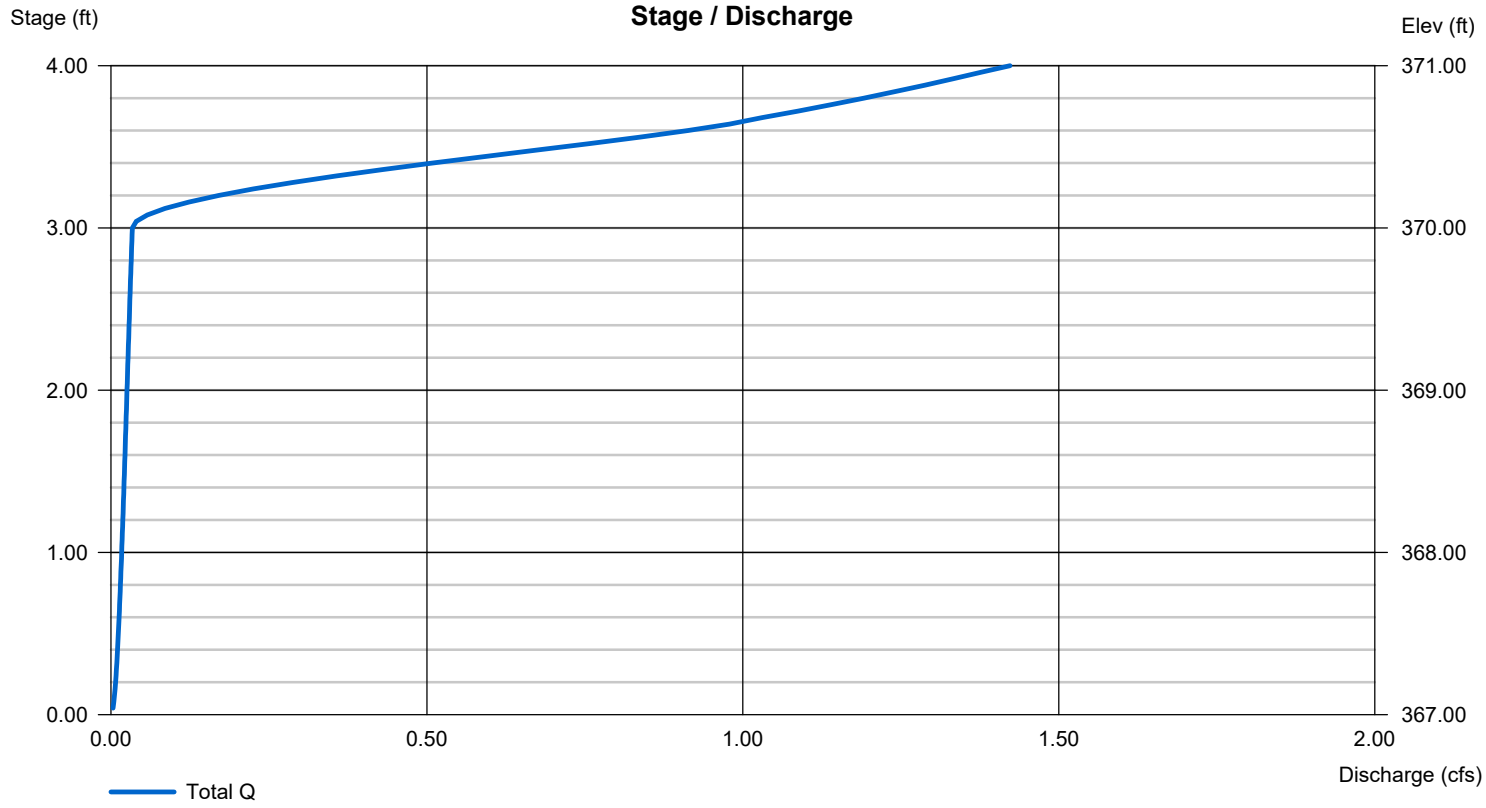
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.720 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



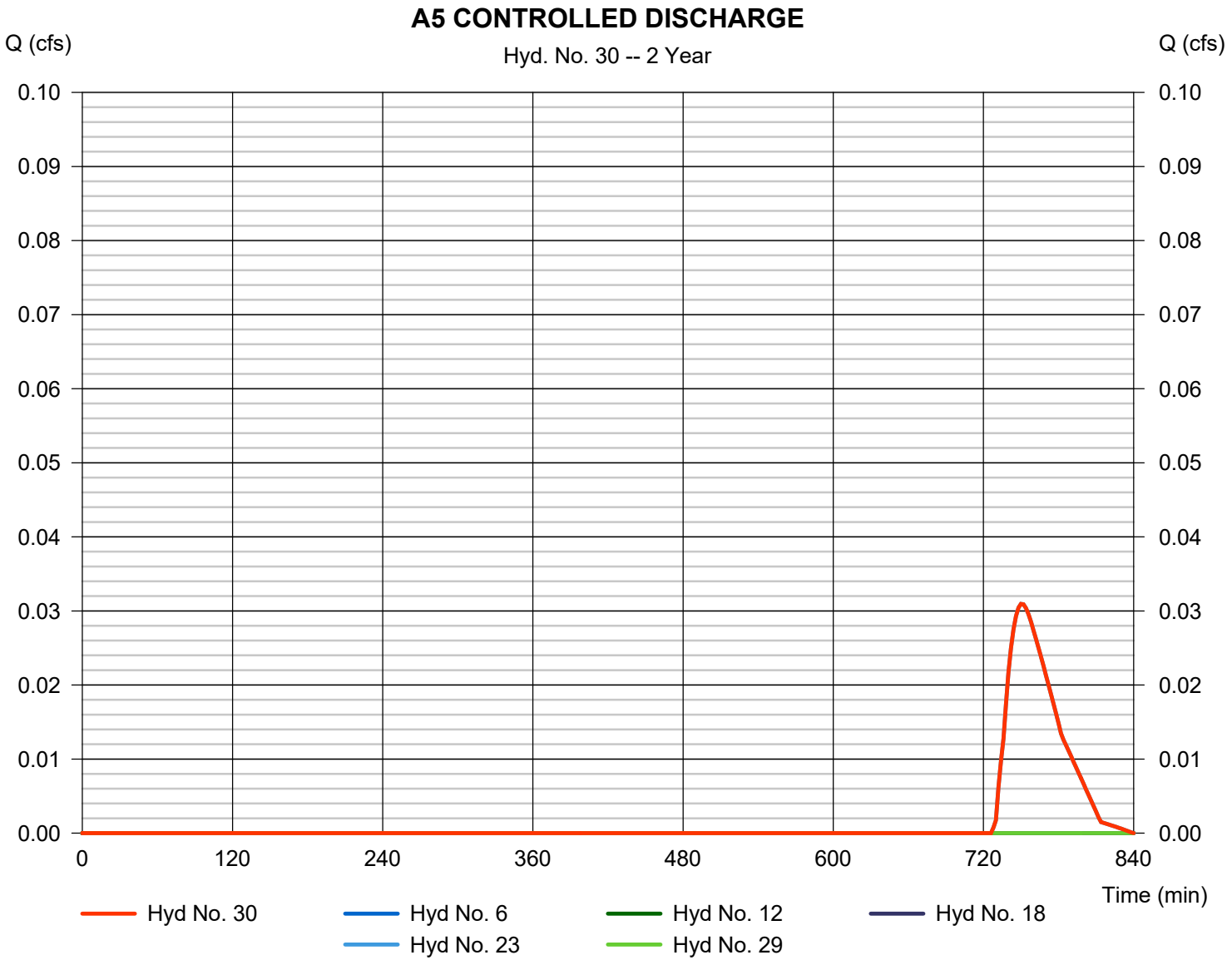
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 30

A5 CONTROLLED DISCHARGE

Hydrograph type	=	Combine	Peak discharge	=	0.031 cfs
Storm frequency	=	2 yrs	Time to peak	=	750 min
Time interval	=	2 min	Hyd. volume	=	84 cuft
Inflow hyds.	=	6, 12, 18, 23, 29	Contrib. drain. area	=	0.000 ac



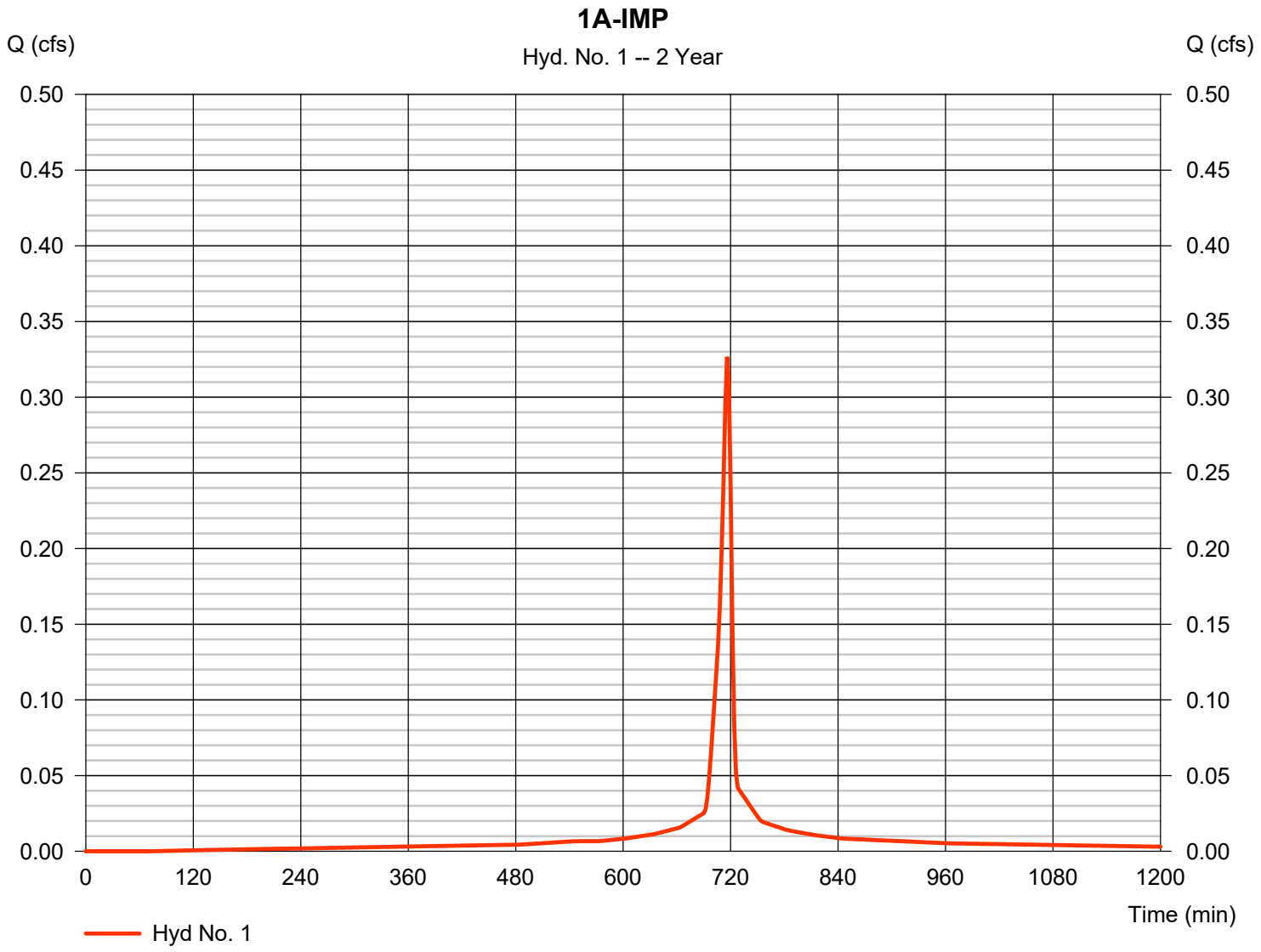
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 1

1A-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.327 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 765 cuft
Drainage area	= 0.074 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



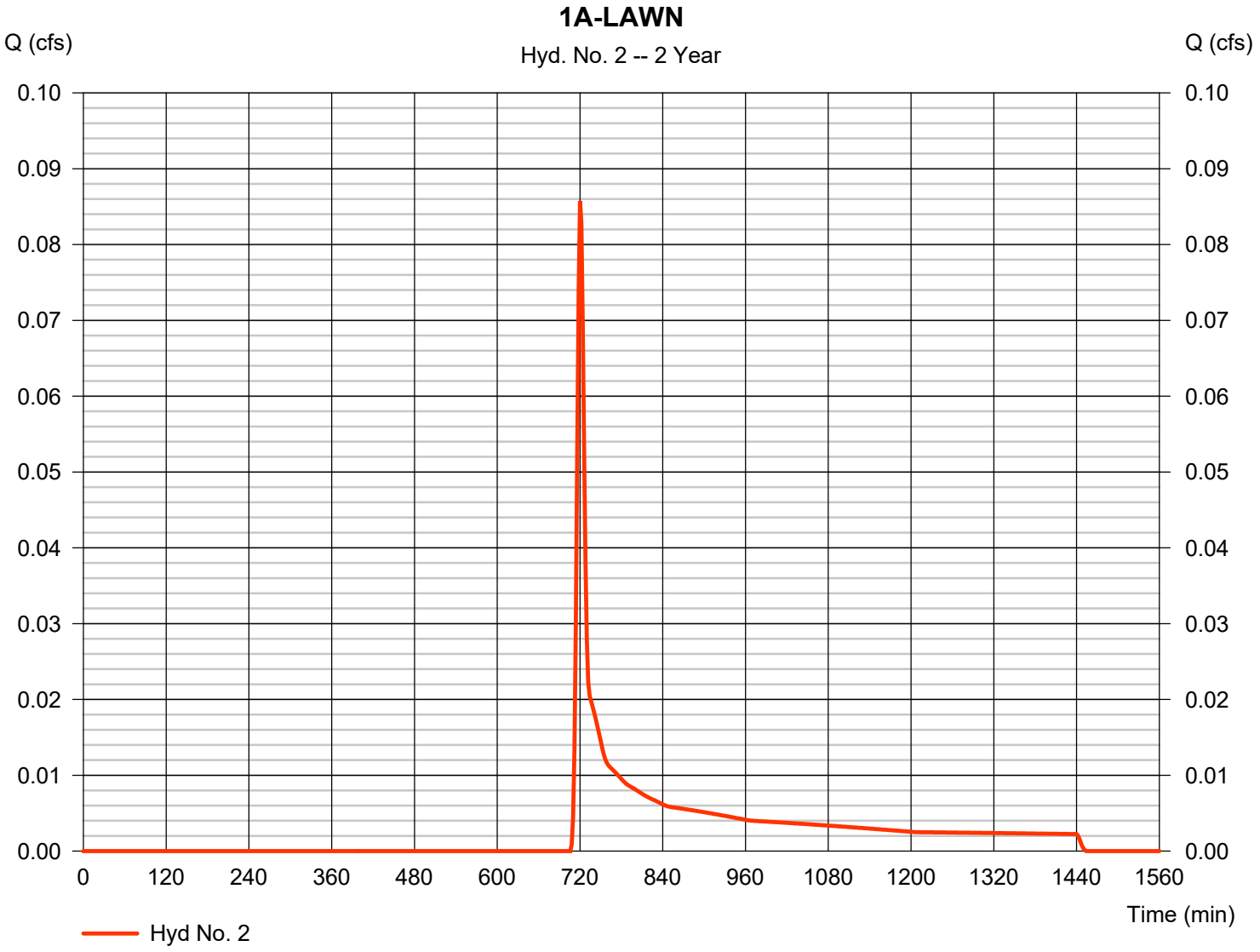
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 2

1A-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.086 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 252 cuft
Drainage area	= 0.147 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



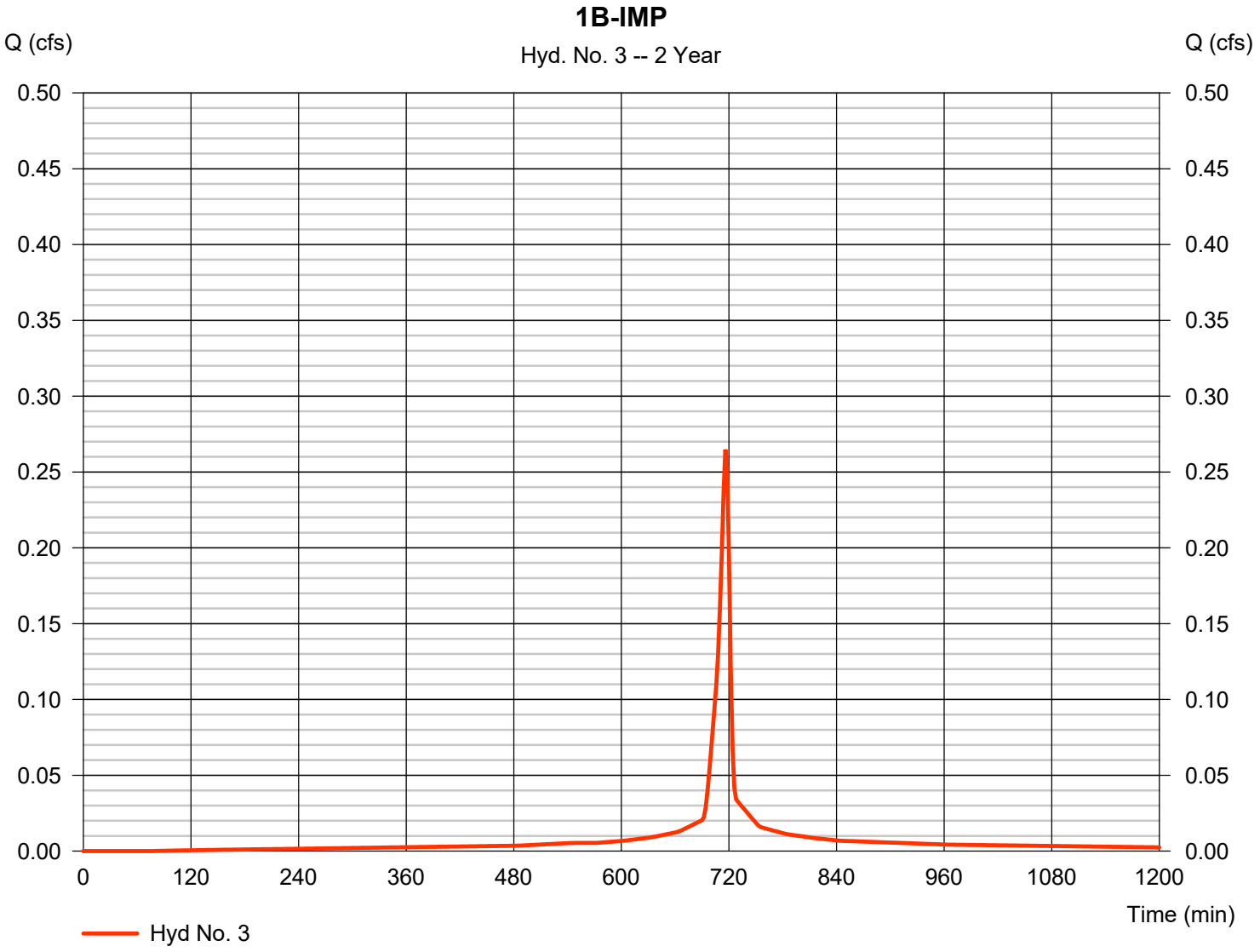
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 3

1B-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.265 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 620 cuft
Drainage area	= 0.060 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



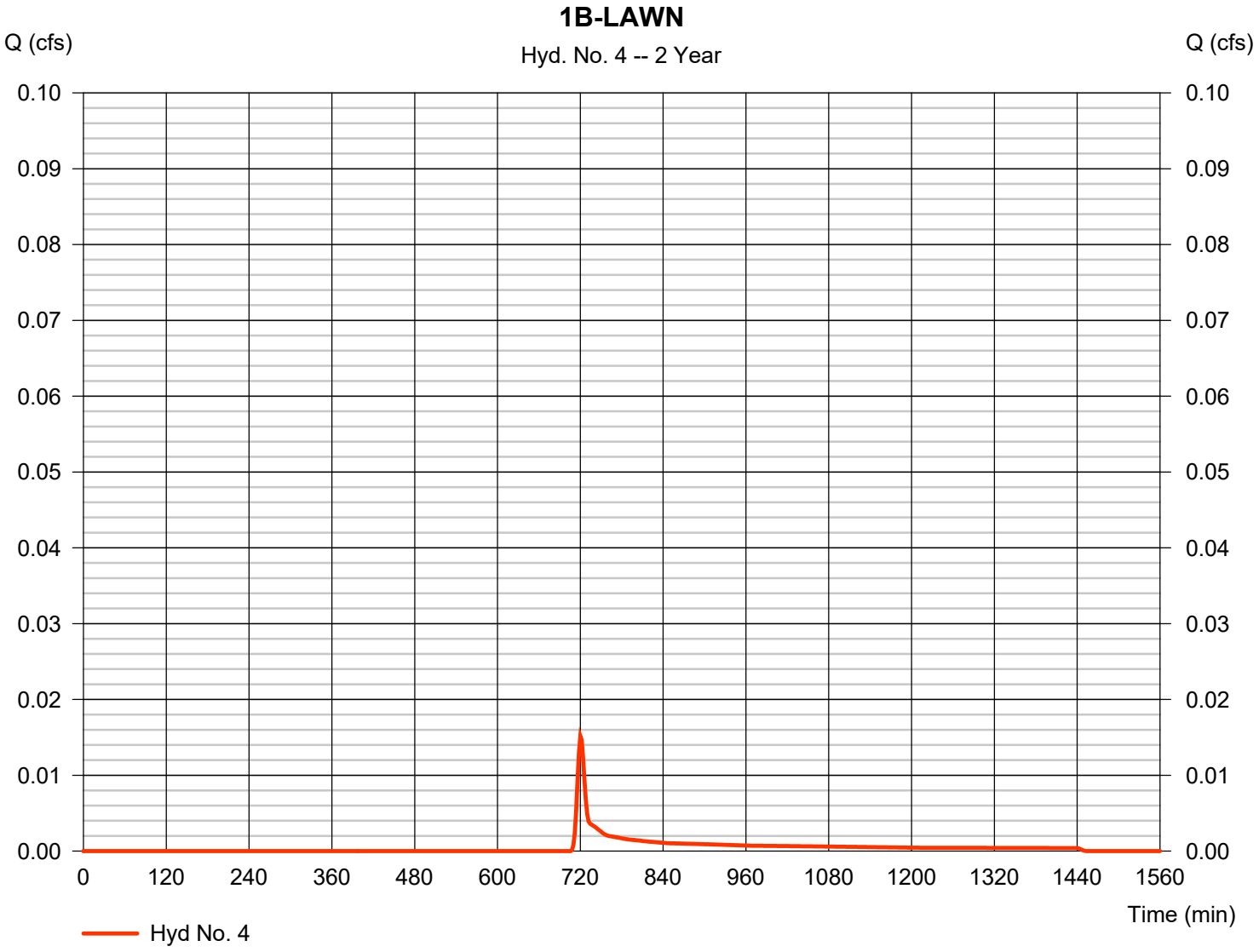
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 4

1B-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.015 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 45 cuft
Drainage area	= 0.026 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



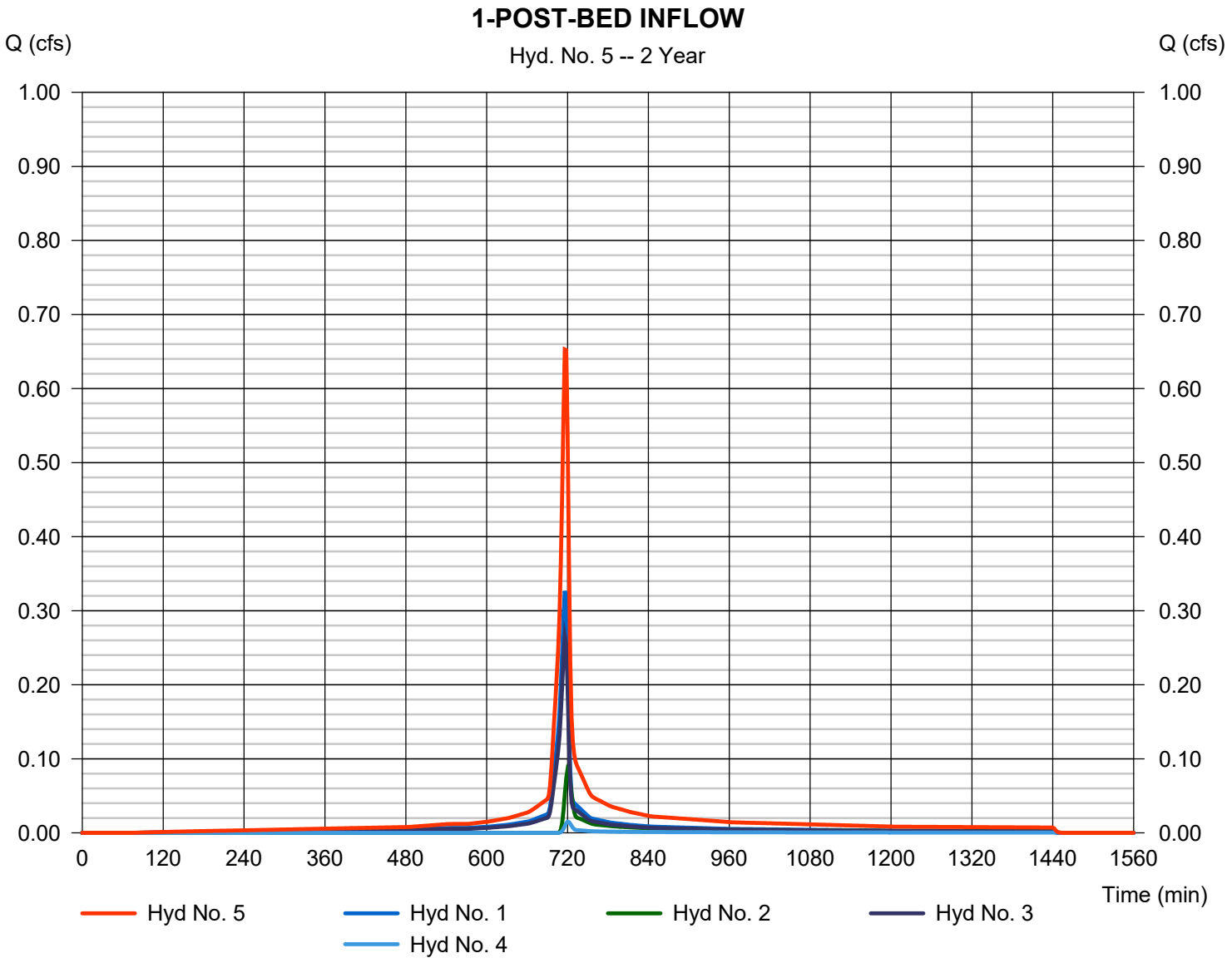
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 5

1-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.653 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,682 cuft
Inflow hyds.	= 1, 2, 3, 4	Contrib. drain. area	= 0.307 ac



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

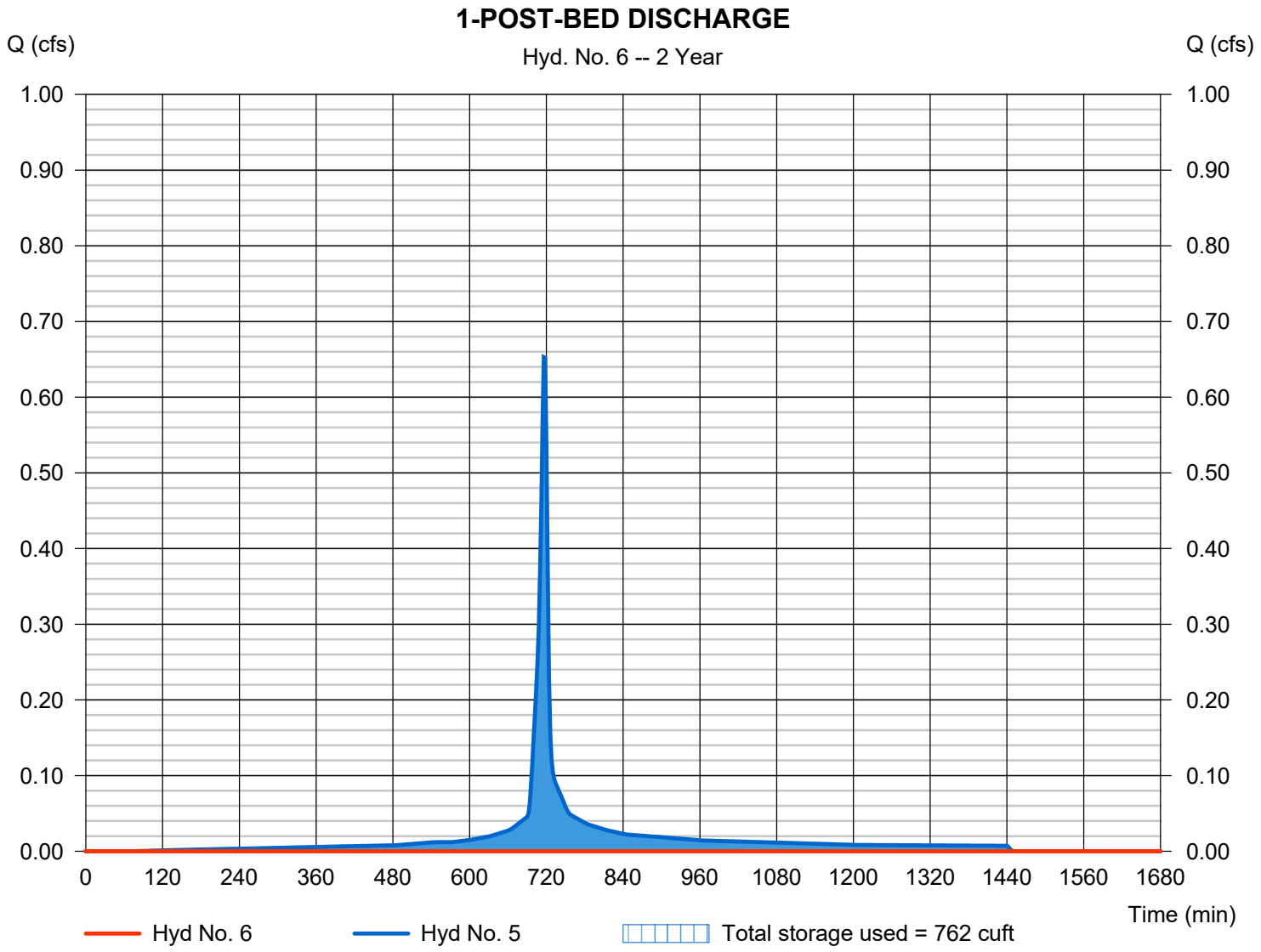
Monday, 12 / 7 / 2020

Hyd. No. 6

1-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	406 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	5 - 1-POST-BED INFLOW	Max. Elevation	=	352.25 ft
Reservoir name	=	LOT 1 INFILTRATION BASIN	Max. Storage	=	762 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 1 - LOT 1 INFILTRATION BASIN

Pond Data

UG Chambers -Invert elev. = 351.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 65.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	351.00	n/a	0	0
0.40	351.40	n/a	148	148
0.80	351.80	n/a	258	406
1.20	352.20	n/a	314	720
1.60	352.60	n/a	346	1,066
2.00	353.00	n/a	361	1,427
2.40	353.40	n/a	361	1,788
2.80	353.80	n/a	345	2,133
3.20	354.20	n/a	314	2,447
3.60	354.60	n/a	258	2,705
4.00	355.00	n/a	148	2,853

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 354.00	0.00	0.00	0.00
Length (ft)	= 43.60	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

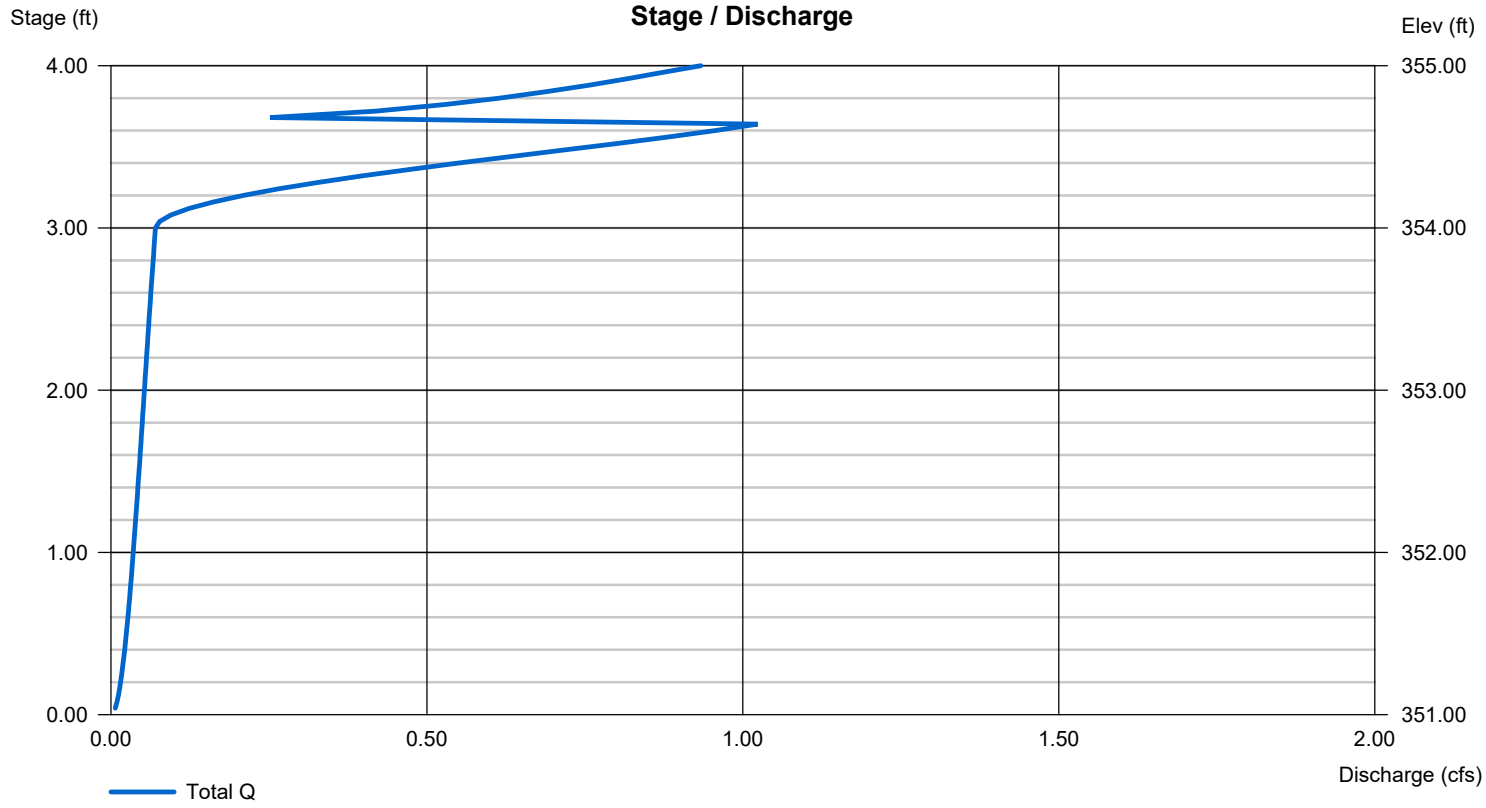
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.600 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



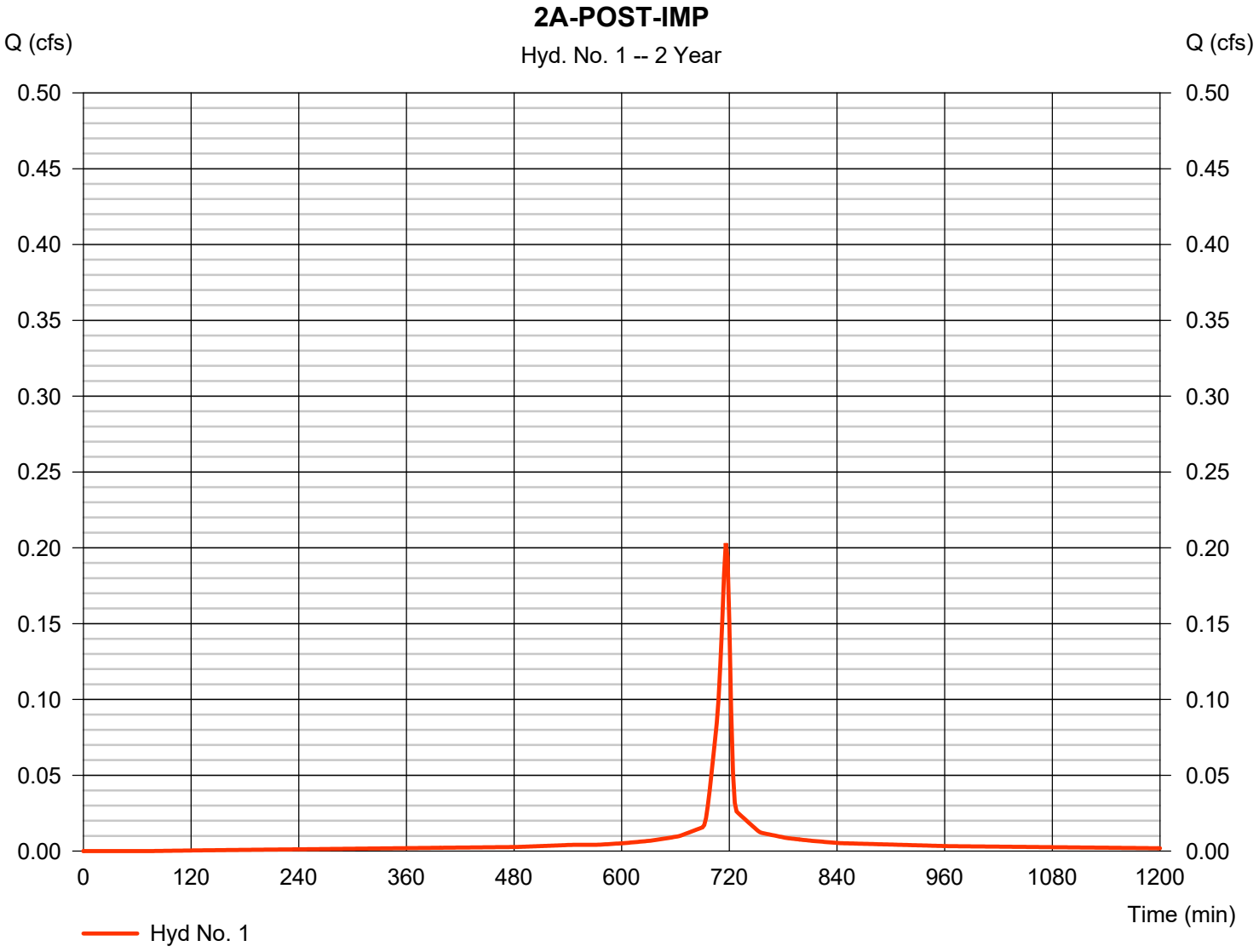
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 1

2A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.203 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 475 cuft
Drainage area	= 0.046 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



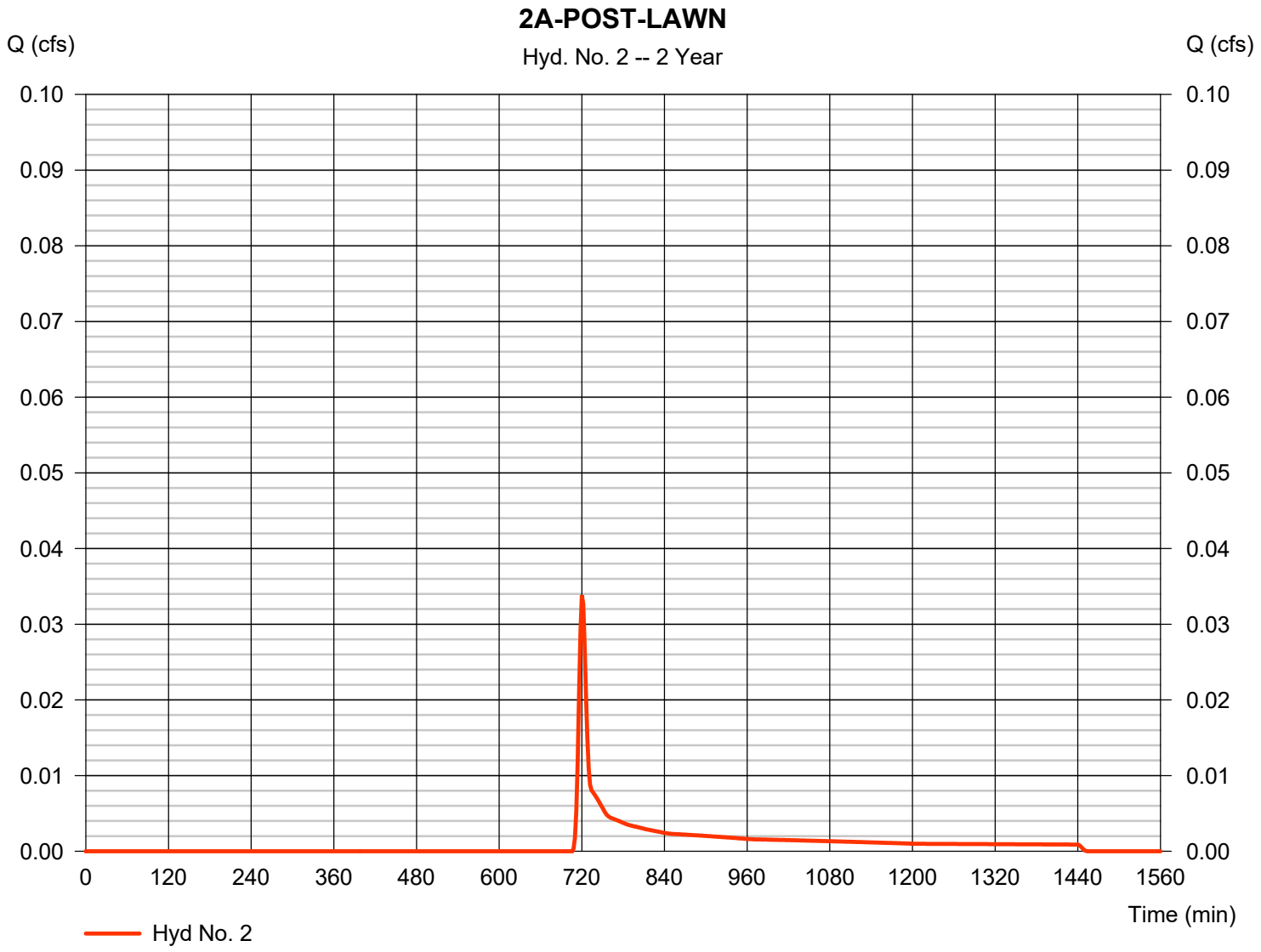
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 2

2A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.034 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 100 cuft
Drainage area	= 0.058 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



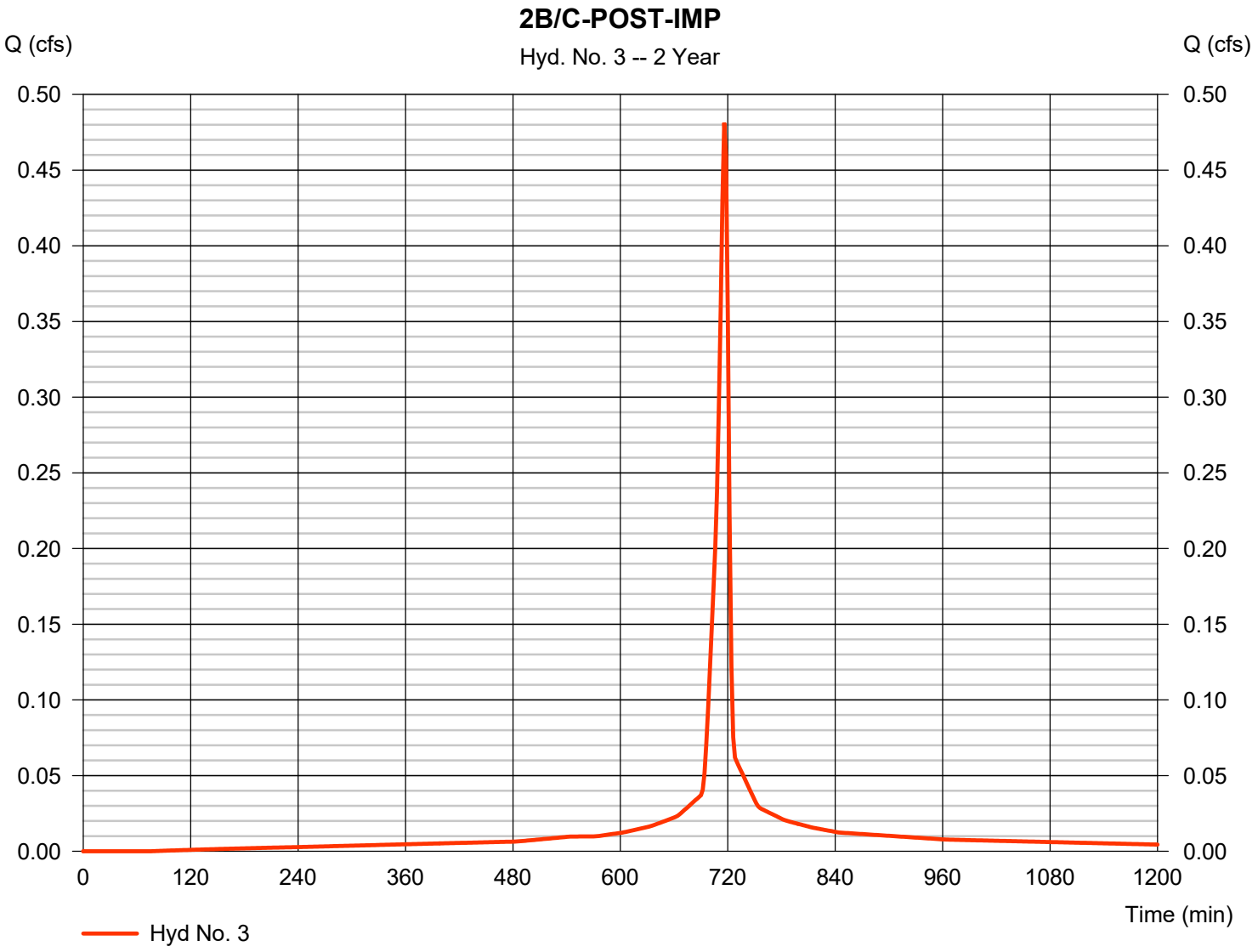
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 3

2B/C-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.481 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,127 cuft
Drainage area	= 0.109 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



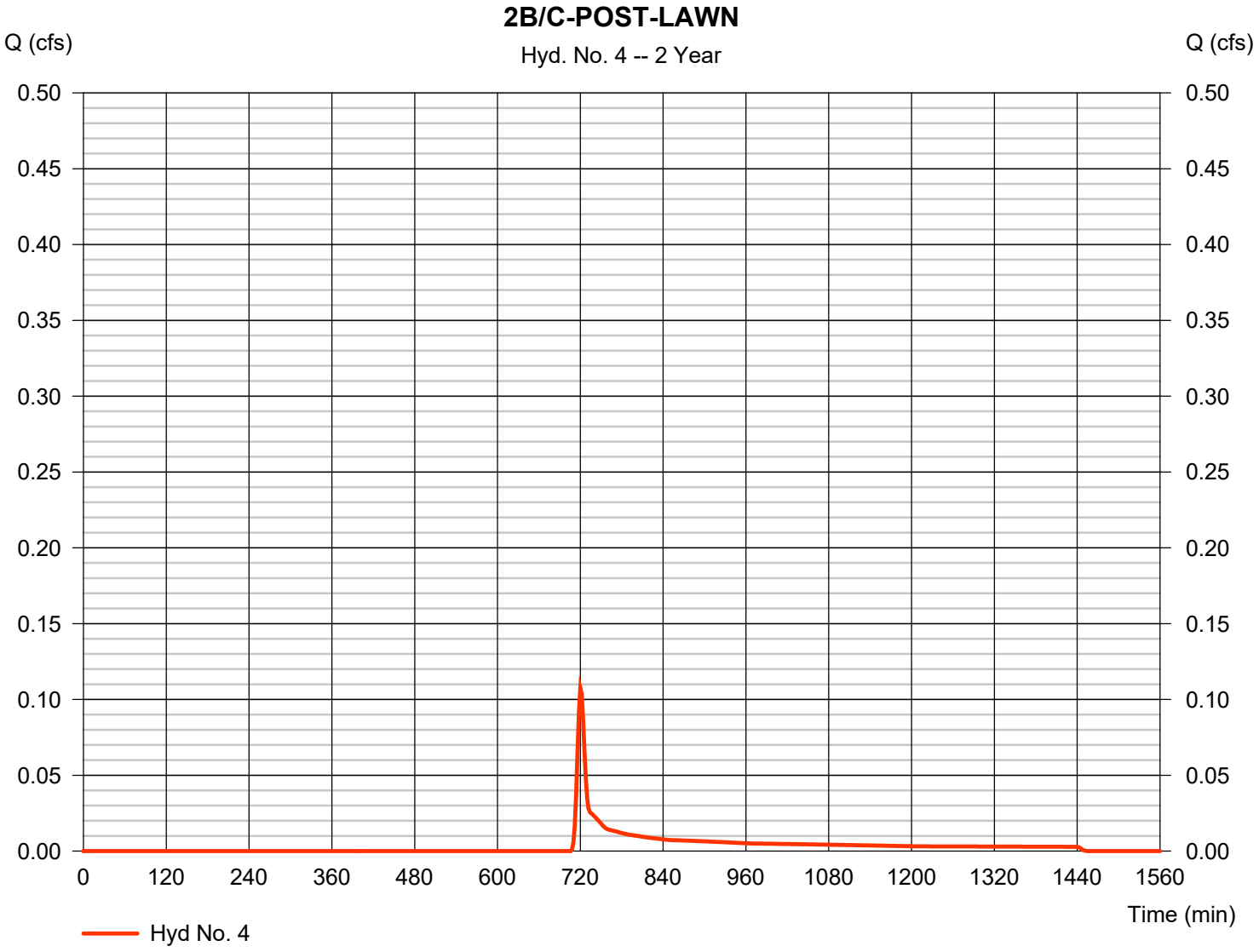
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 4

2B/C-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.107 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 316 cuft
Drainage area	= 0.184 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



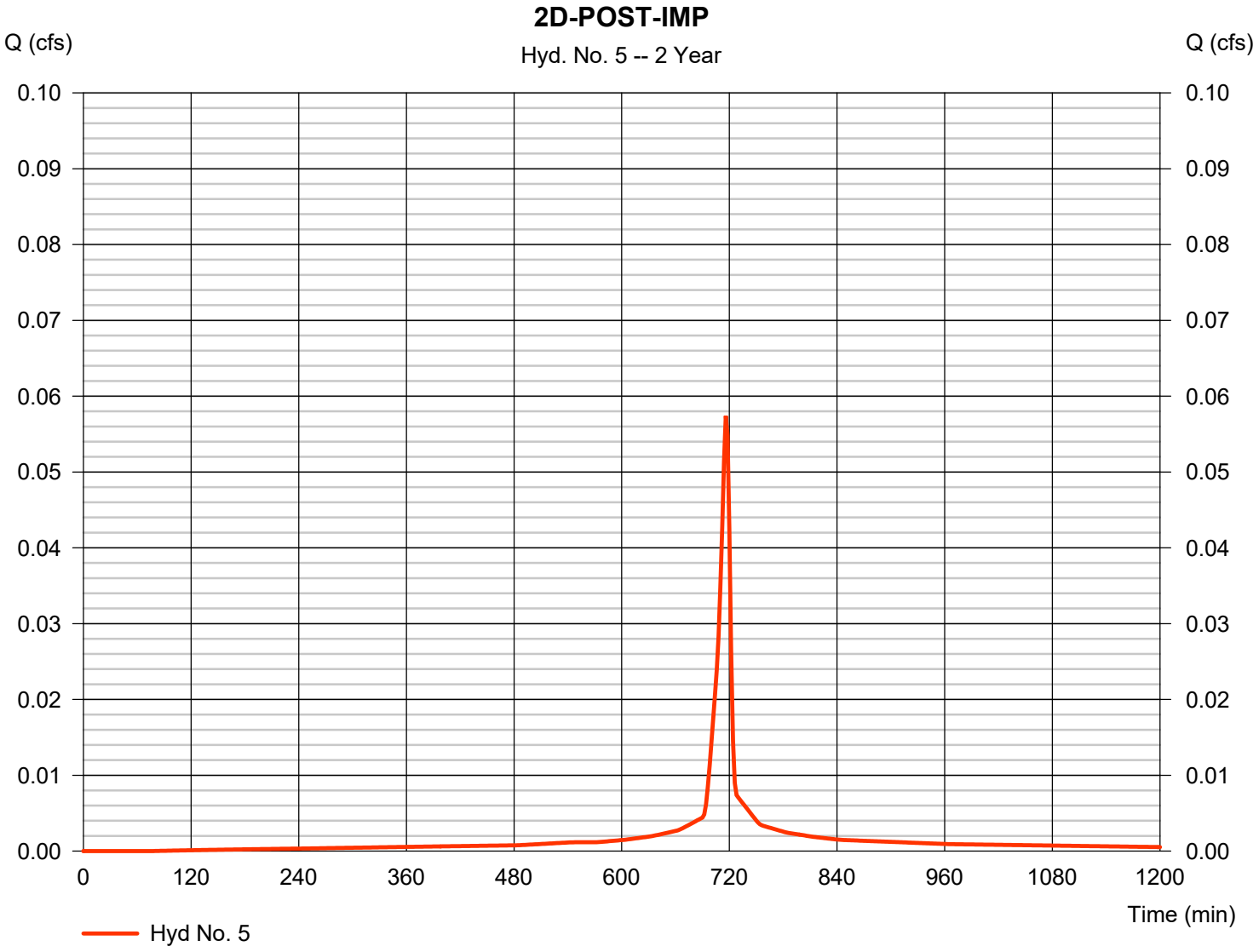
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 5

2D-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.057 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 134 cuft
Drainage area	= 0.013 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



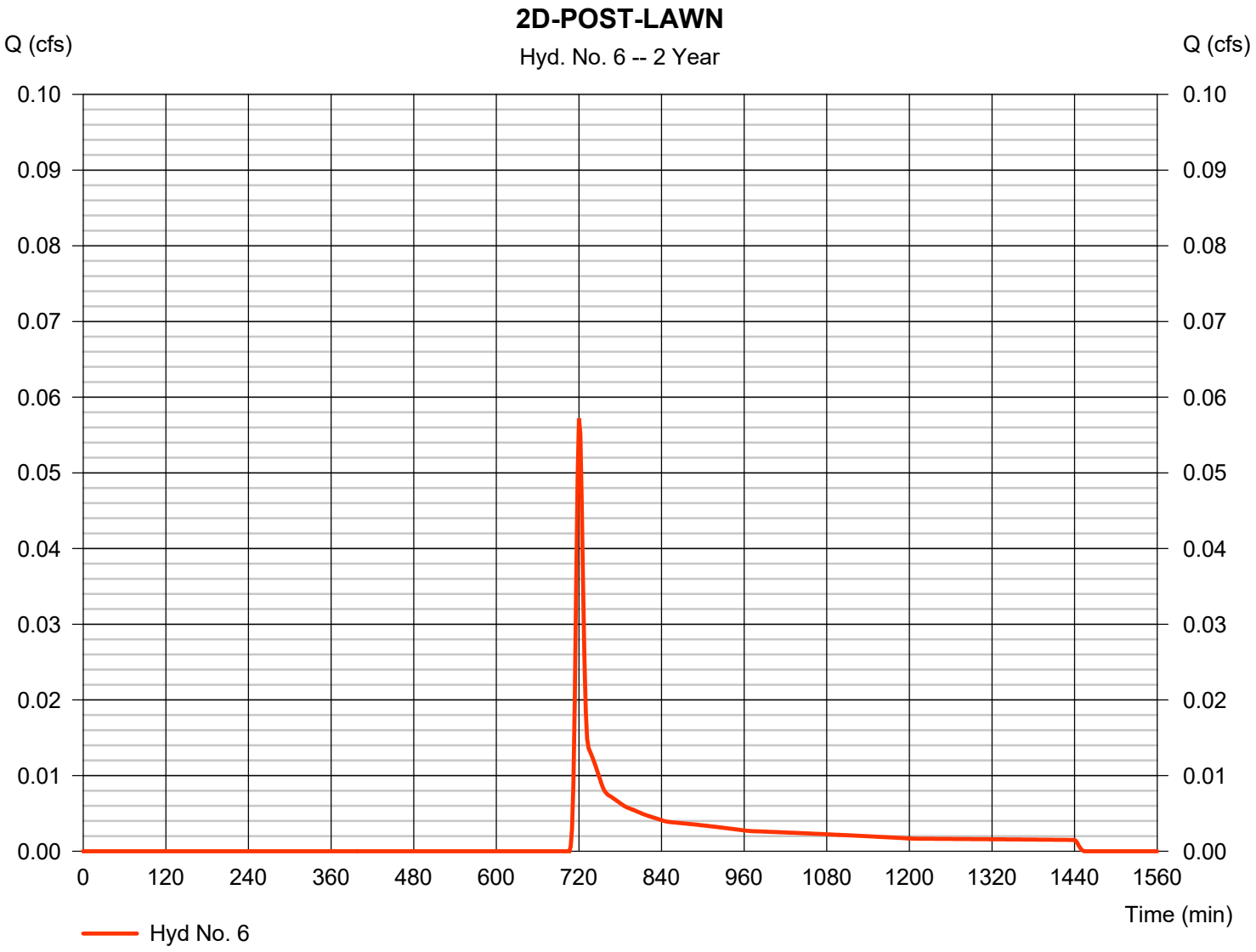
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 6

2D-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.057 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 168 cuft
Drainage area	= 0.098 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



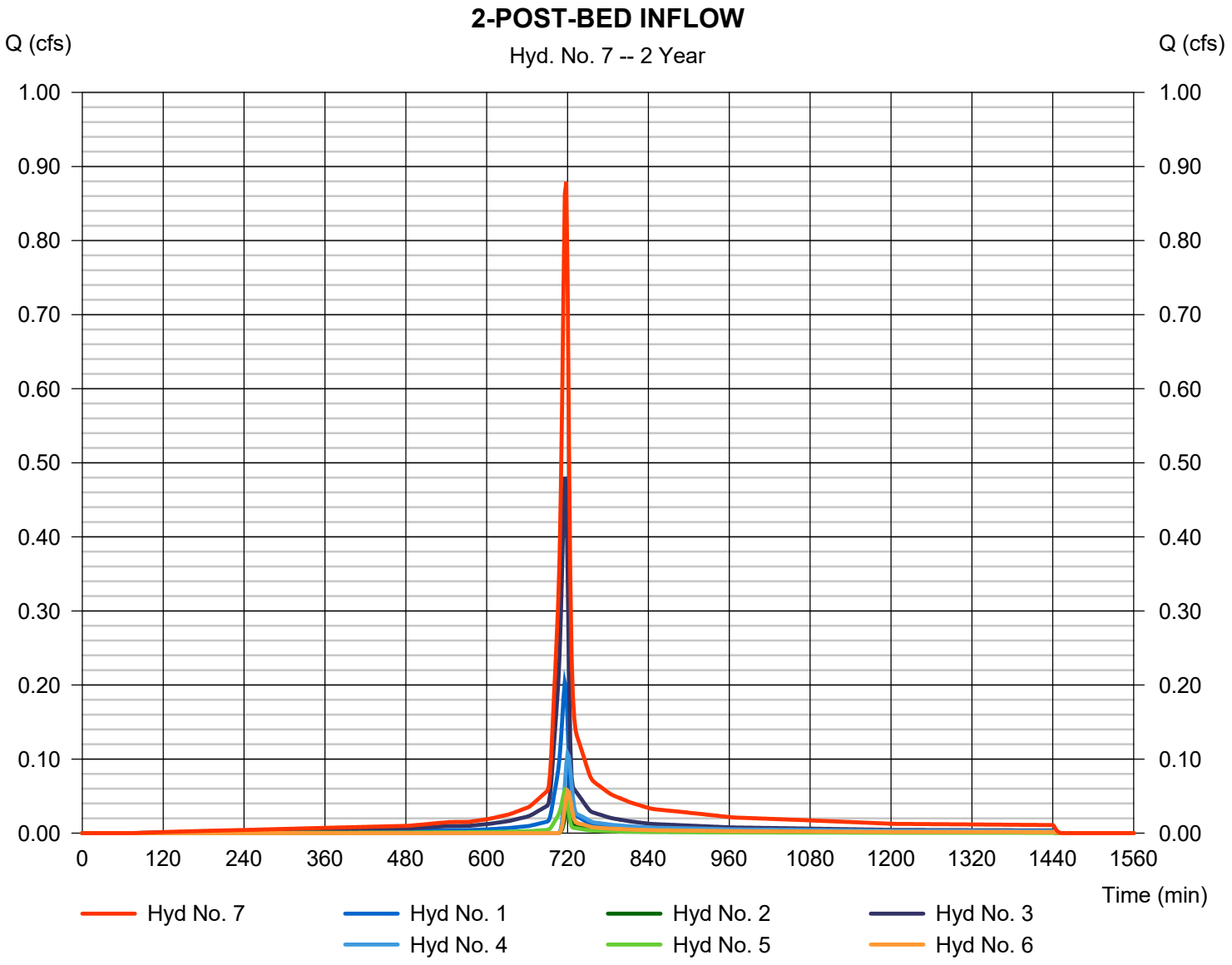
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 7

2-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	0.879 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,320 cuft
Inflow hyds.	=	1, 2, 3, 4, 5, 6	Contrib. drain. area	=	0.508 ac



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

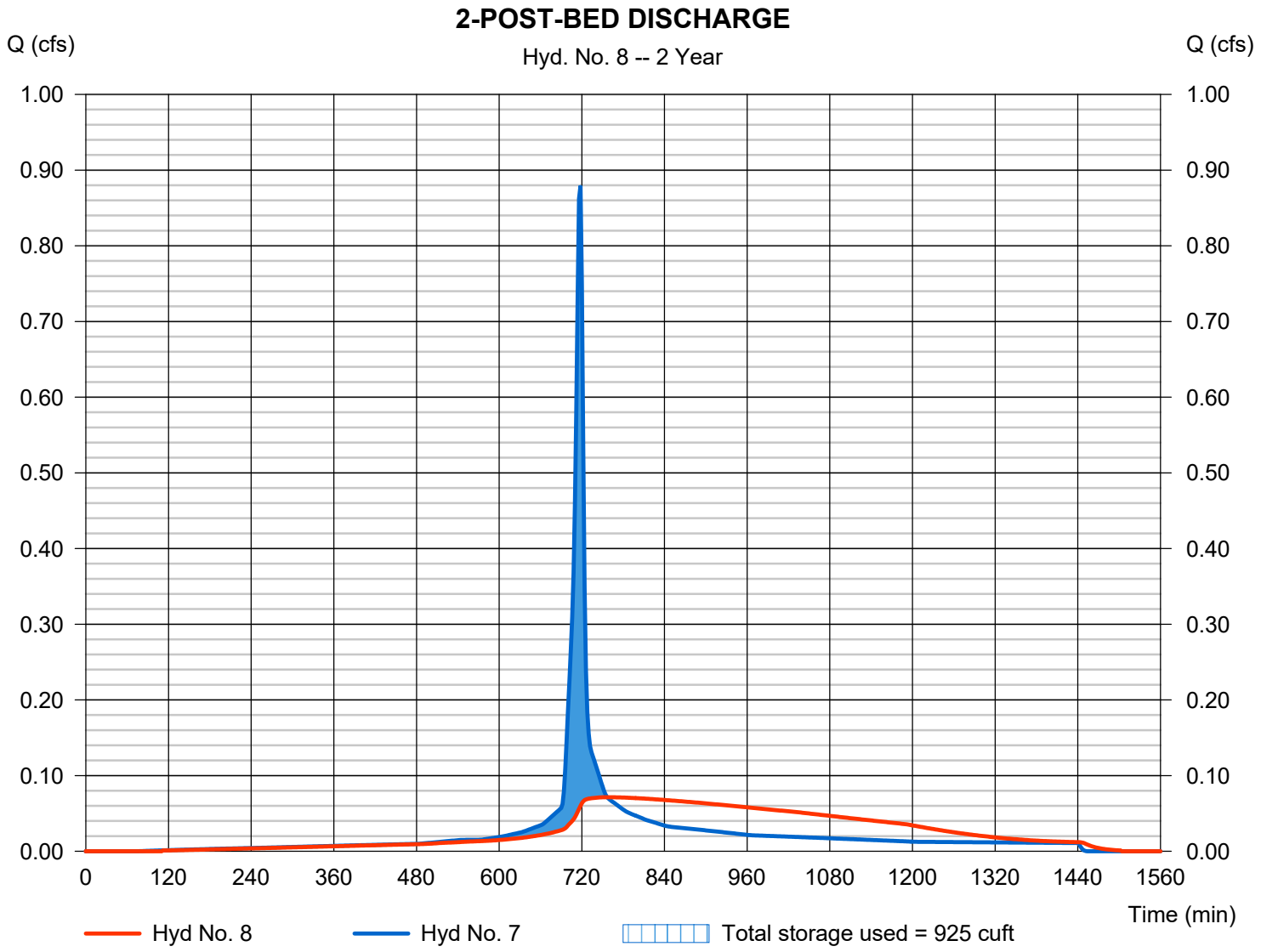
Monday, 12 / 7 / 2020

Hyd. No. 8

2-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.071 cfs
Storm frequency	=	2 yrs	Time to peak	=	756 min
Time interval	=	2 min	Hyd. volume	=	2,319 cuft
Inflow hyd. No.	=	7 - 2-POST-BED INFLOW	Max. Elevation	=	354.44 ft
Reservoir name	=	LOT 2 INFILTRATION POND	Max. Storage	=	925 cuft

Storage Indication method used. Outflow includes exfiltration.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 1 - LOT 2 INFILTRATION POND

Pond Data

UG Chambers -Invert elev. = 353.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 65.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	353.00	n/a	0	0
0.40	353.40	n/a	148	148
0.80	353.80	n/a	258	406
1.20	354.20	n/a	314	720
1.60	354.60	n/a	346	1,066
2.00	355.00	n/a	361	1,427
2.40	355.40	n/a	361	1,788
2.80	355.80	n/a	345	2,133
3.20	356.20	n/a	314	2,447
3.60	356.60	n/a	258	2,705
4.00	357.00	n/a	148	2,853

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 355.75	0.00	0.00	0.00
Length (ft)	= 47.20	0.00	0.00	0.00
Slope (%)	= 1.20	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

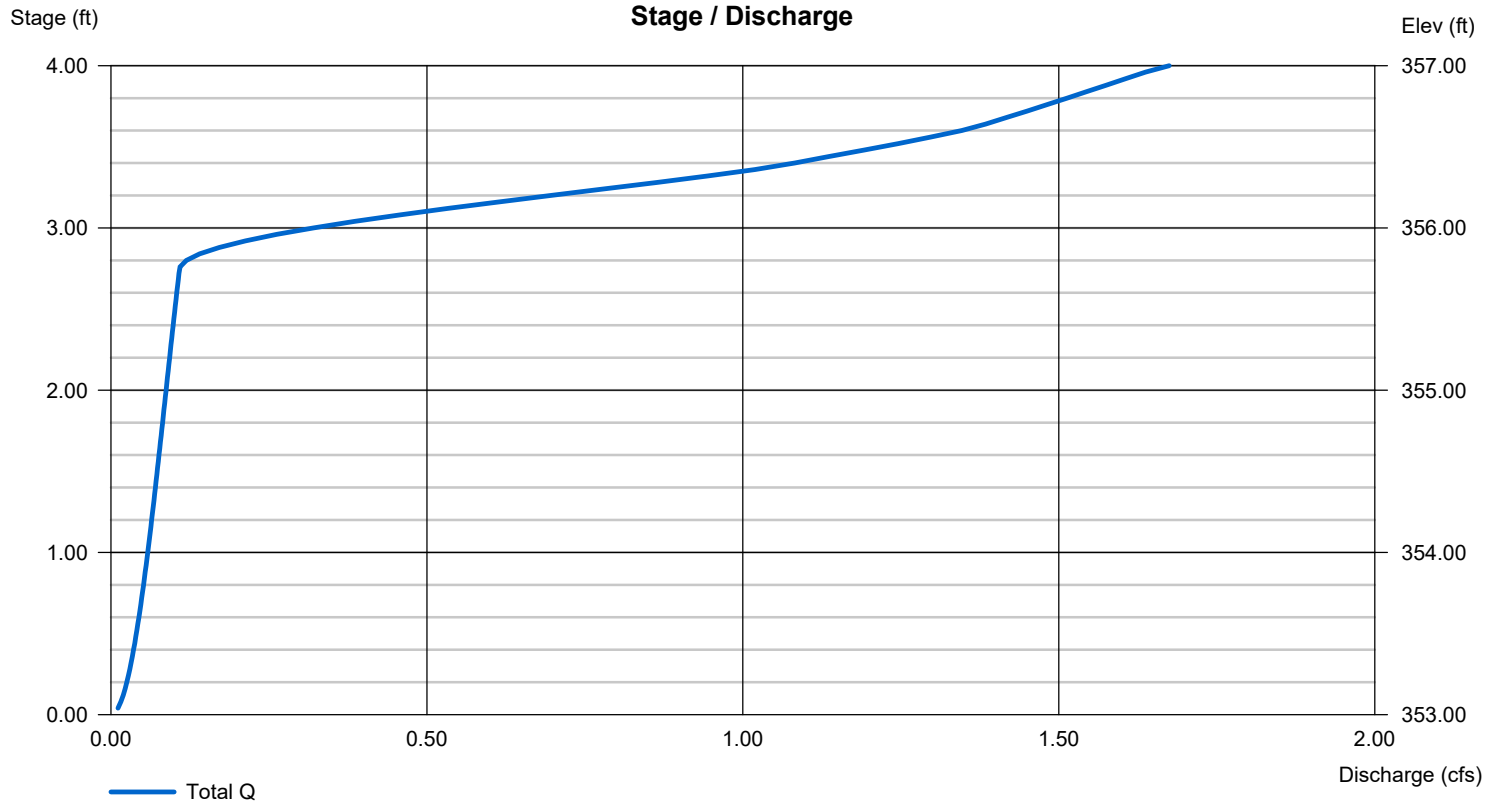
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 2.640 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



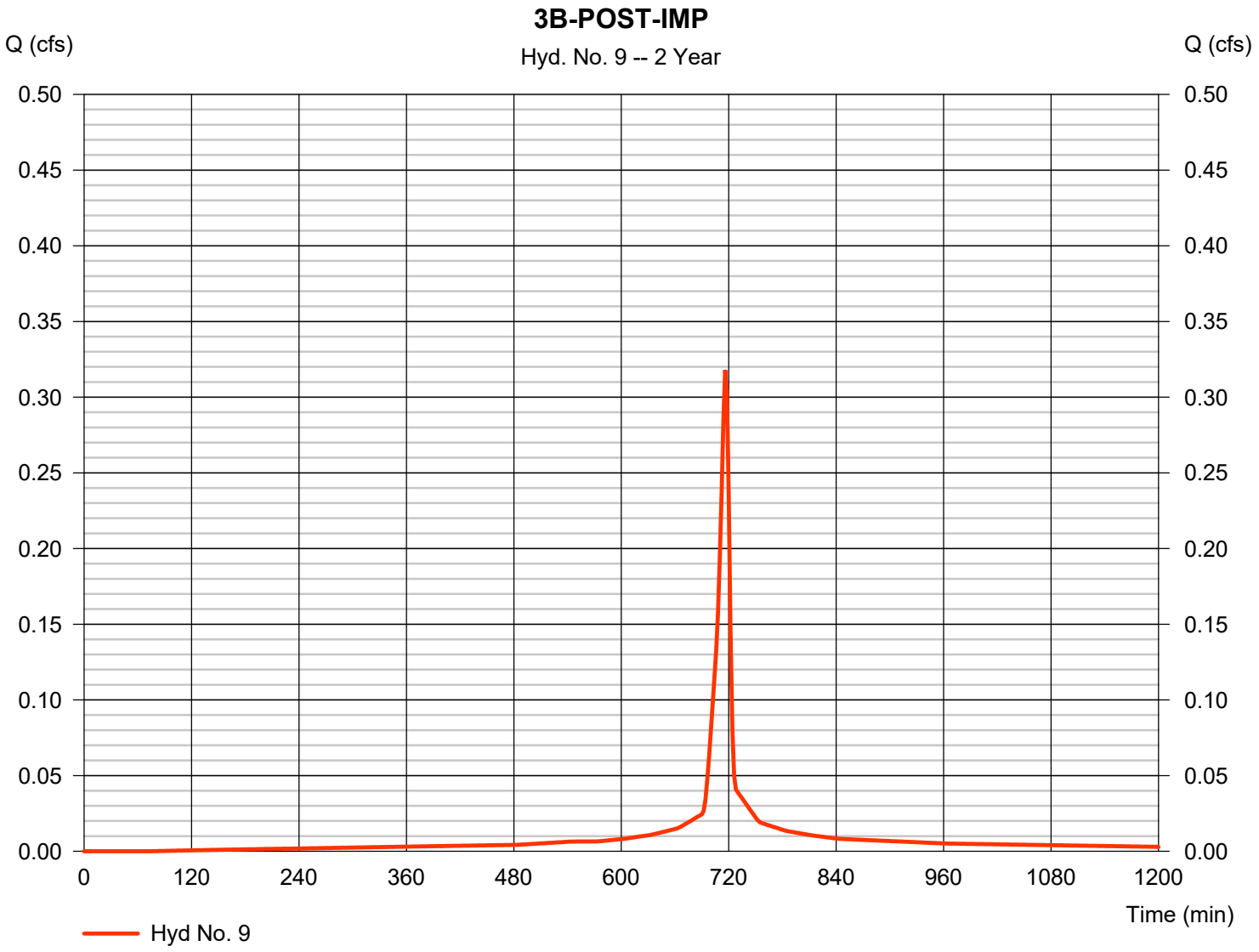
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 9

3B-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.318 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	744 cuft
Drainage area	=	0.072 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



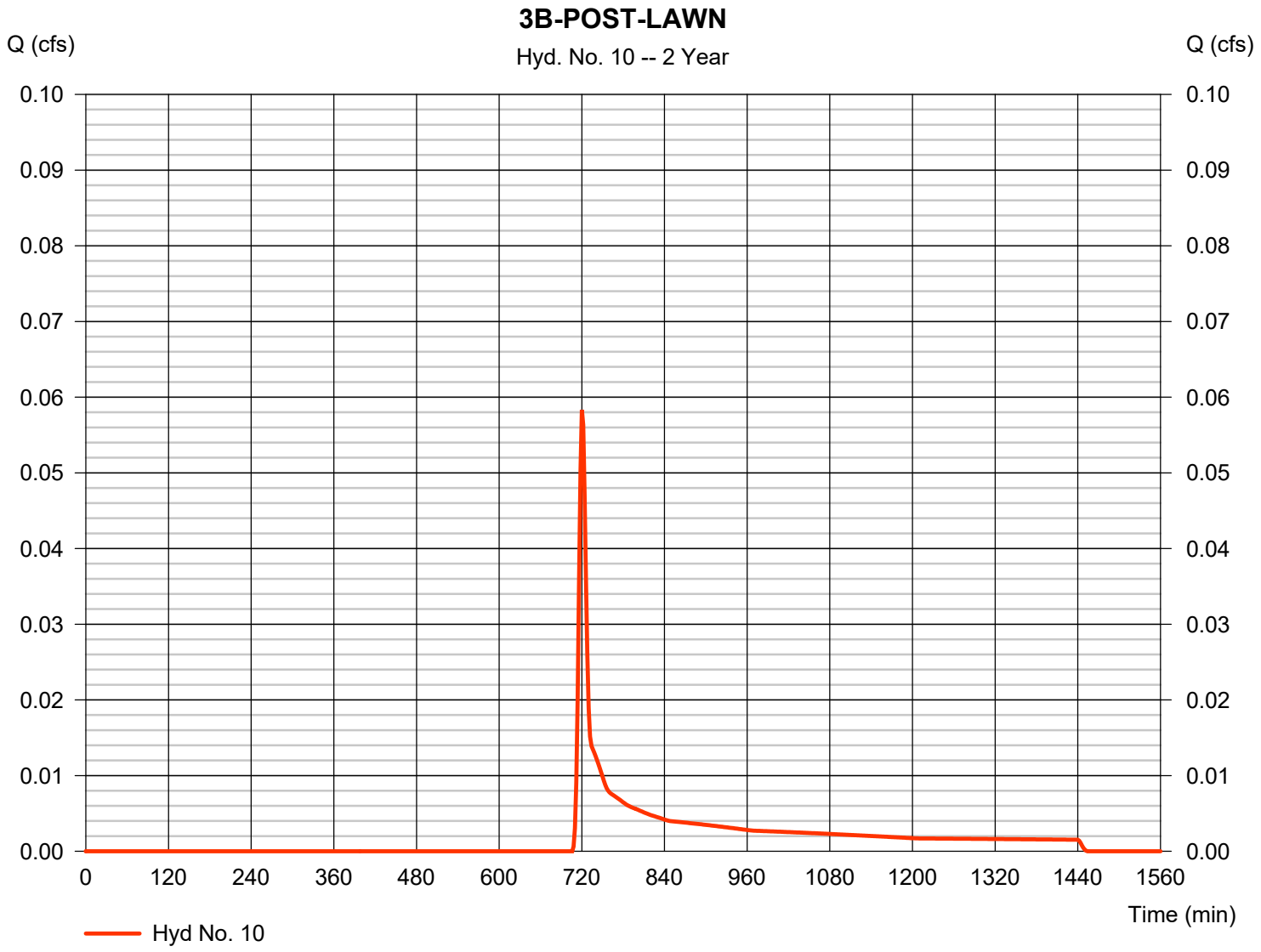
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 10

3B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.058 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 172 cuft
Drainage area	= 0.100 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



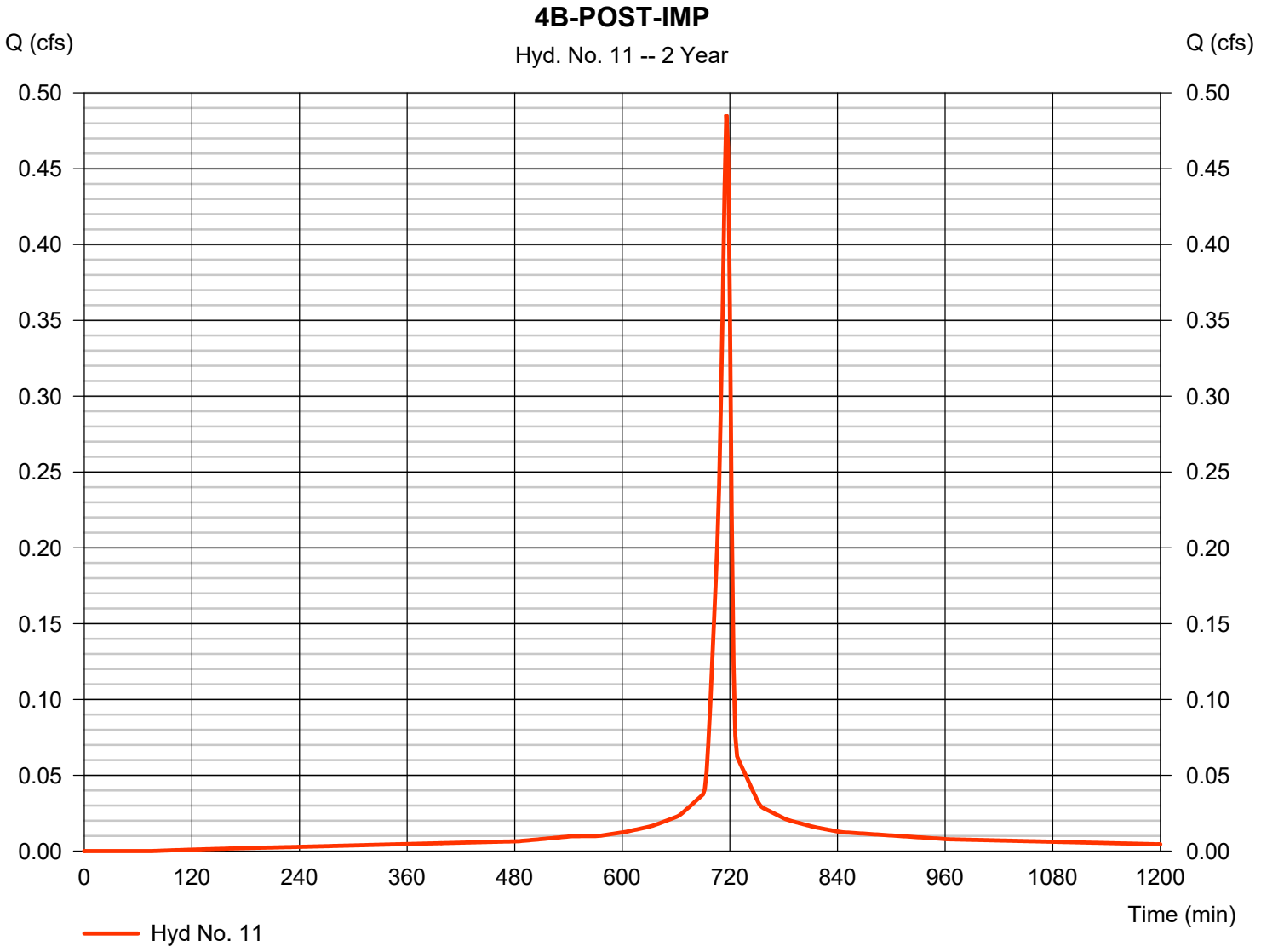
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 11

4B-POST-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.486 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	1,137 cuft
Drainage area	=	0.110 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



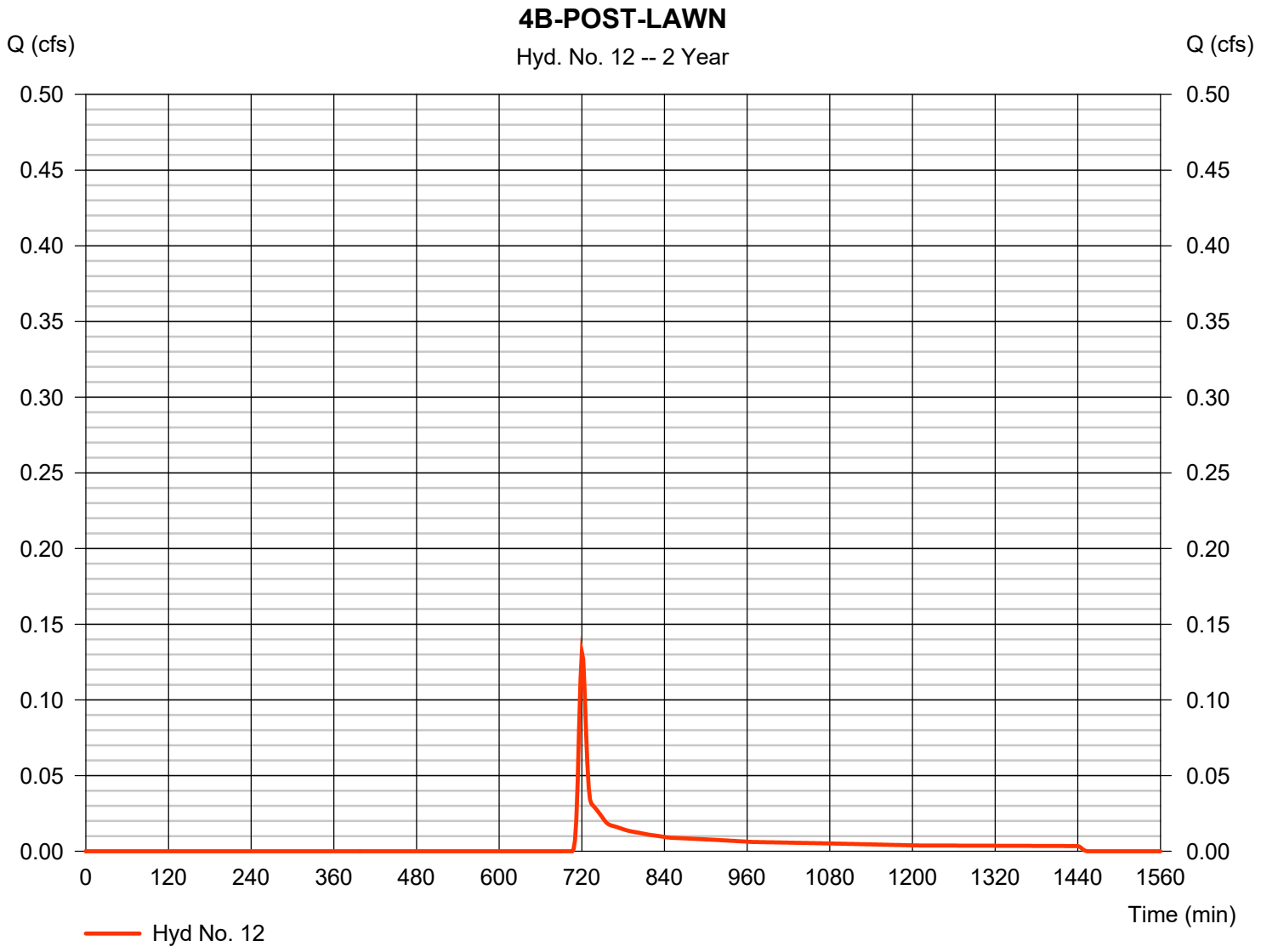
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 12

4B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.131 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 386 cuft
Drainage area	= 0.225 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



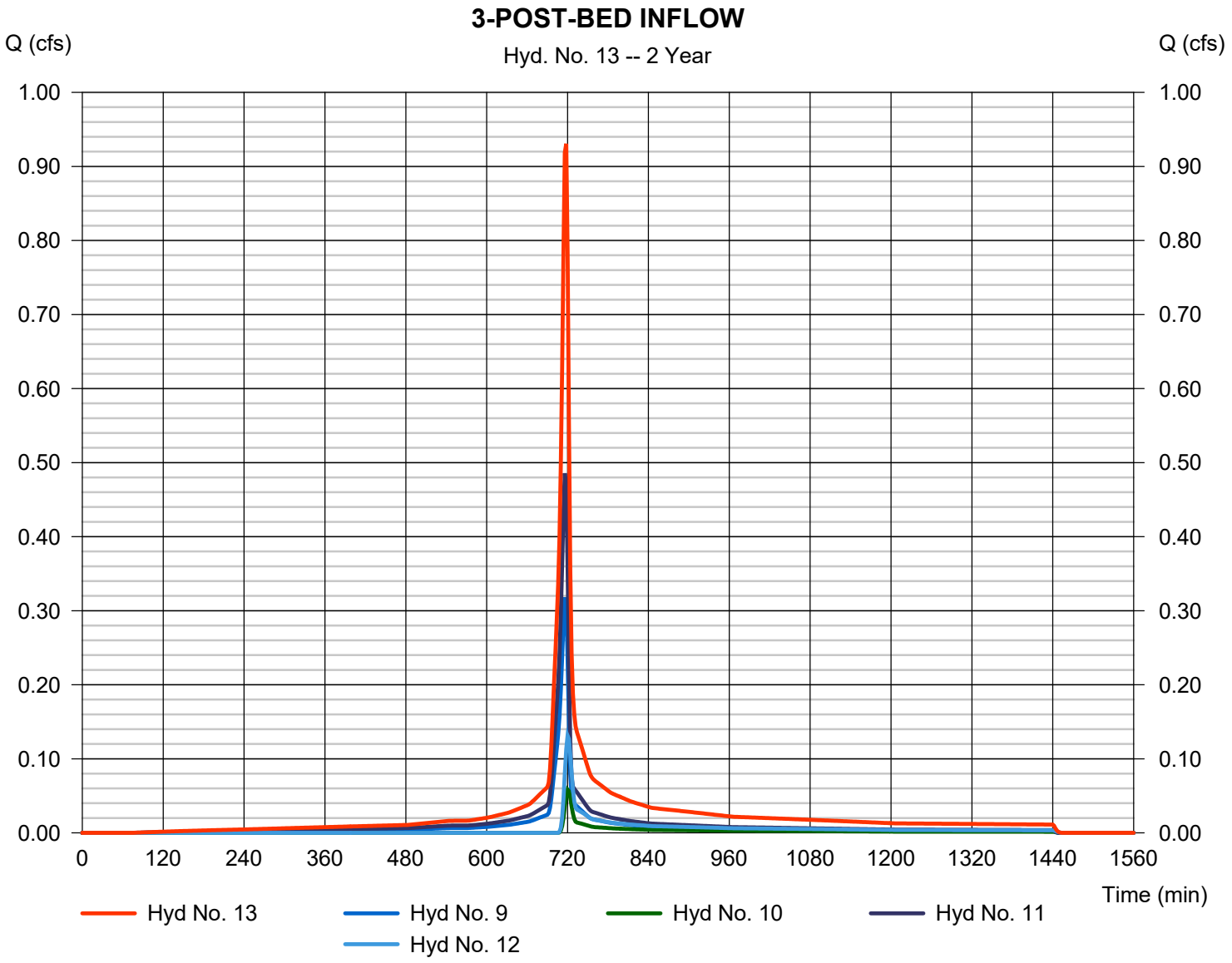
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 13

3-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	0.931 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,439 cuft
Inflow hyds.	=	9, 10, 11, 12	Contrib. drain. area	=	0.507 ac



Hydrograph Report

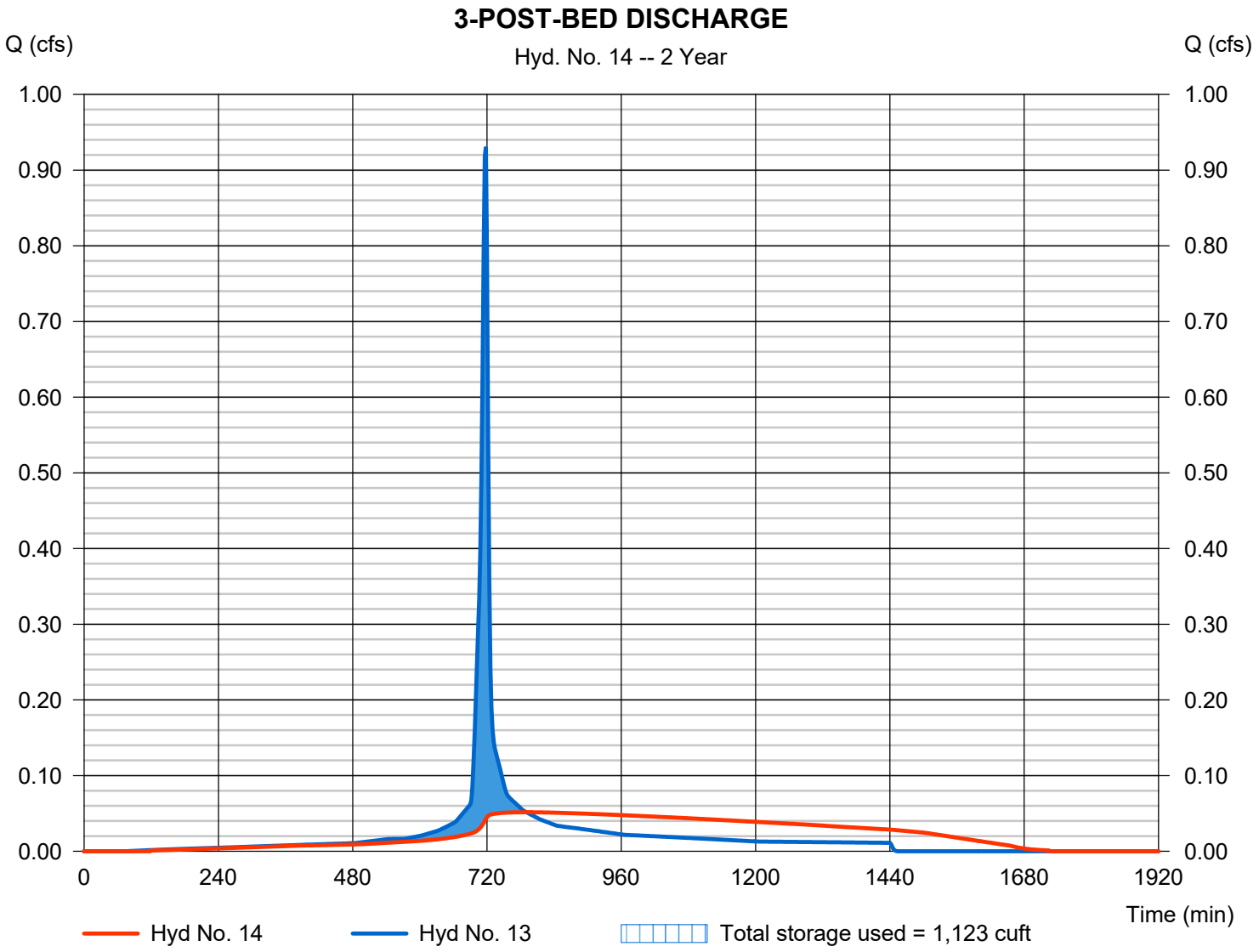
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 14

3-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.052 cfs
Storm frequency	=	2 yrs	Time to peak	=	790 min
Time interval	=	2 min	Hyd. volume	=	2,437 cuft
Inflow hyd. No.	=	13 - 3-POST-BED INFLOW	Max. Elevation	=	358.58 ft
Reservoir name	=	LOT 3 INFILTRATION POND	Max. Storage	=	1,123 cuft

Storage Indication method used. Outflow includes exfiltration.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Pond No. 2 - LOT 3 INFILTRATION POND

Pond Data

UG Chambers -Invert elev. = 357.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 50.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	357.00	n/a	0	0
0.40	357.40	n/a	160	160
0.80	357.80	n/a	277	437
1.20	358.20	n/a	337	774
1.60	358.60	n/a	371	1,146
2.00	359.00	n/a	388	1,534
2.40	359.40	n/a	388	1,922
2.80	359.80	n/a	371	2,293
3.20	360.20	n/a	337	2,630
3.60	360.60	n/a	277	2,907
4.00	361.00	n/a	159	3,067

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 359.50	0.00	0.00	0.00
Length (ft)	= 36.20	0.00	0.00	0.00
Slope (%)	= 0.60	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

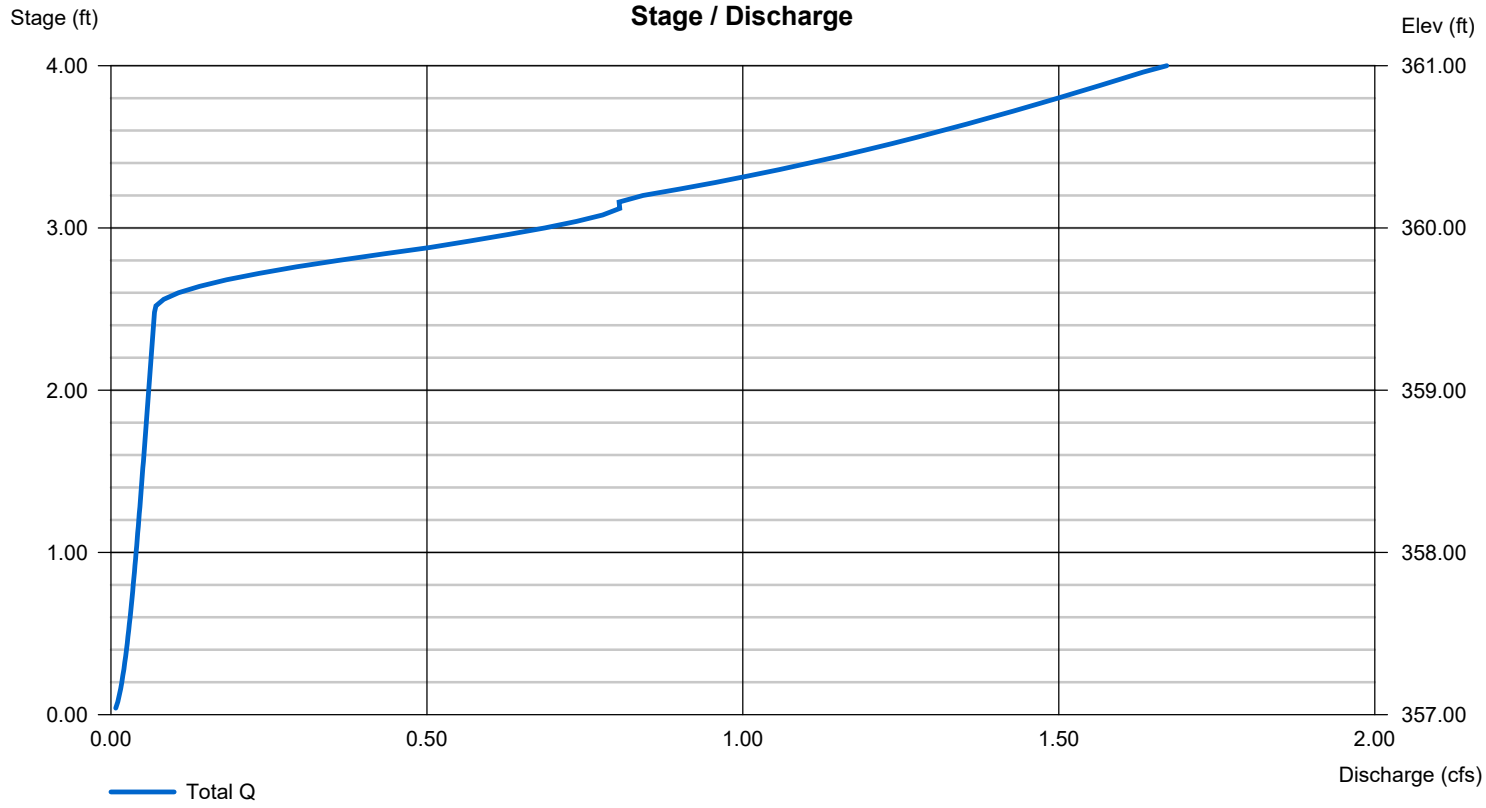
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.680 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



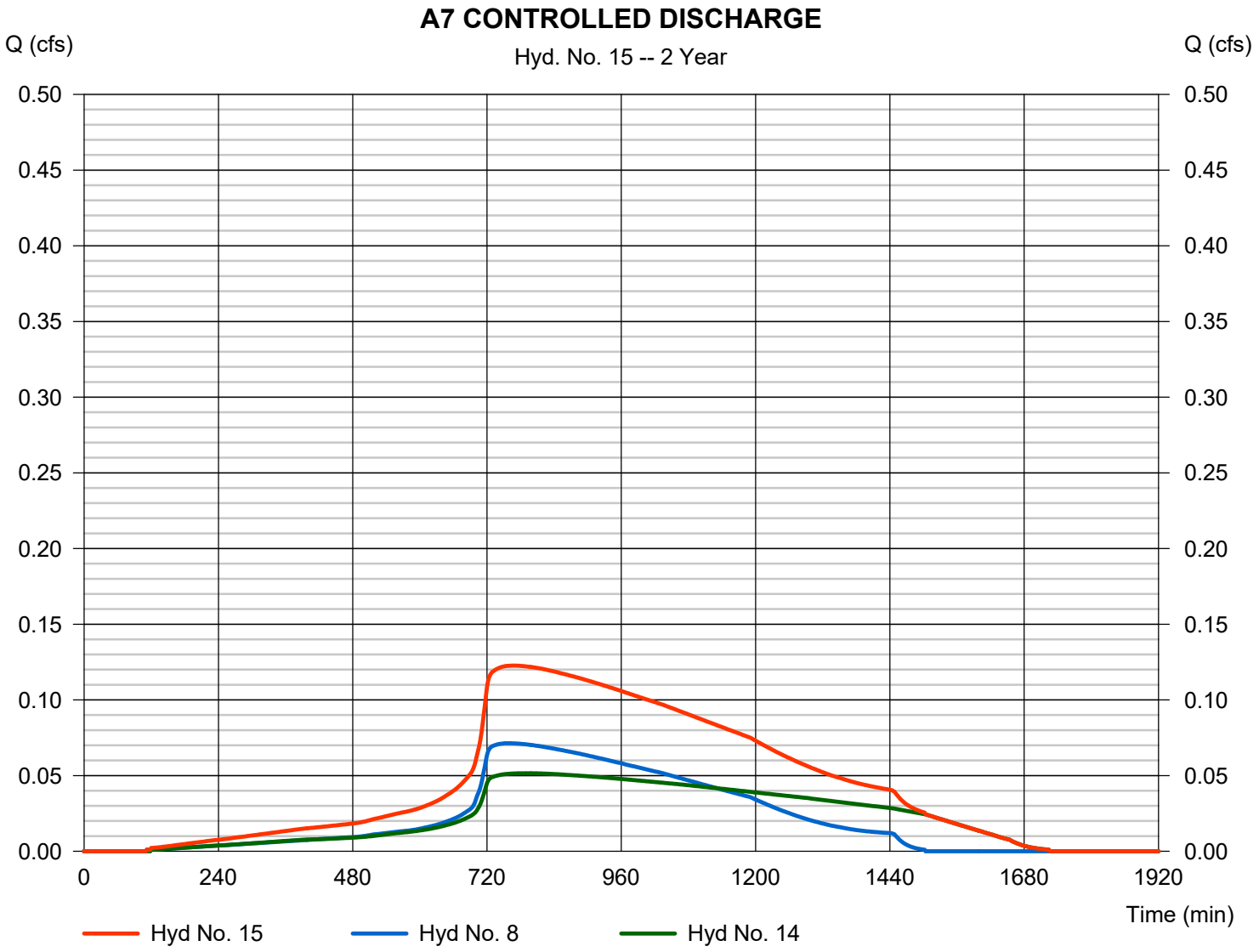
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 15

A7 CONTROLLED DISCHARGE

Hydrograph type	= Combine	Peak discharge	= 0.123 cfs
Storm frequency	= 2 yrs	Time to peak	= 768 min
Time interval	= 2 min	Hyd. volume	= 4,756 cuft
Inflow hyds.	= 8, 14	Contrib. drain. area	= 0.000 ac



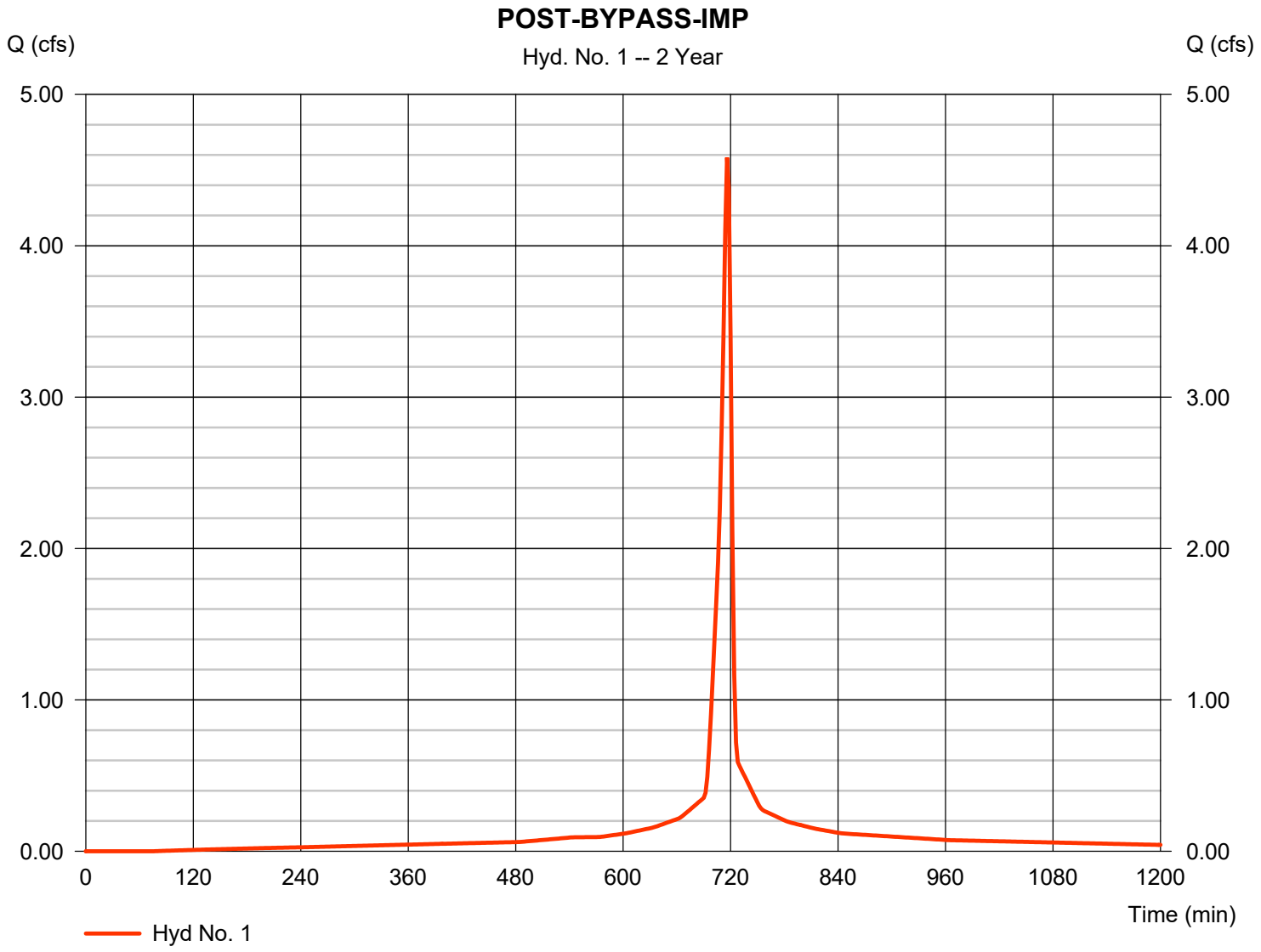
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 1

POST-BYPASS-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 4.583 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 10,729 cuft
Drainage area	= 1.038 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



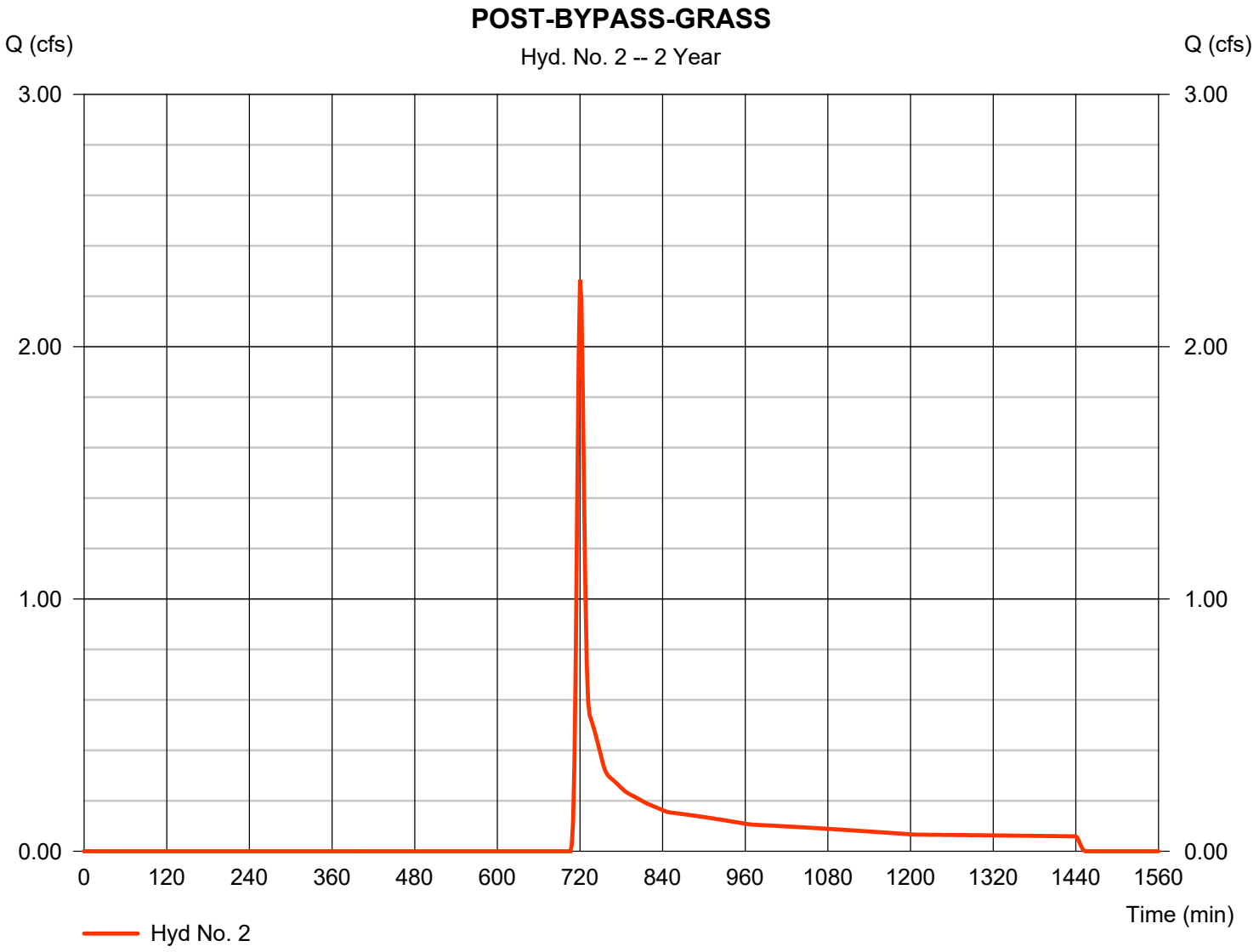
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 12 / 7 / 2020

Hyd. No. 2

POST-BYPASS-GRASS

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.266 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	6,666 cuft
Drainage area	=	3.884 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



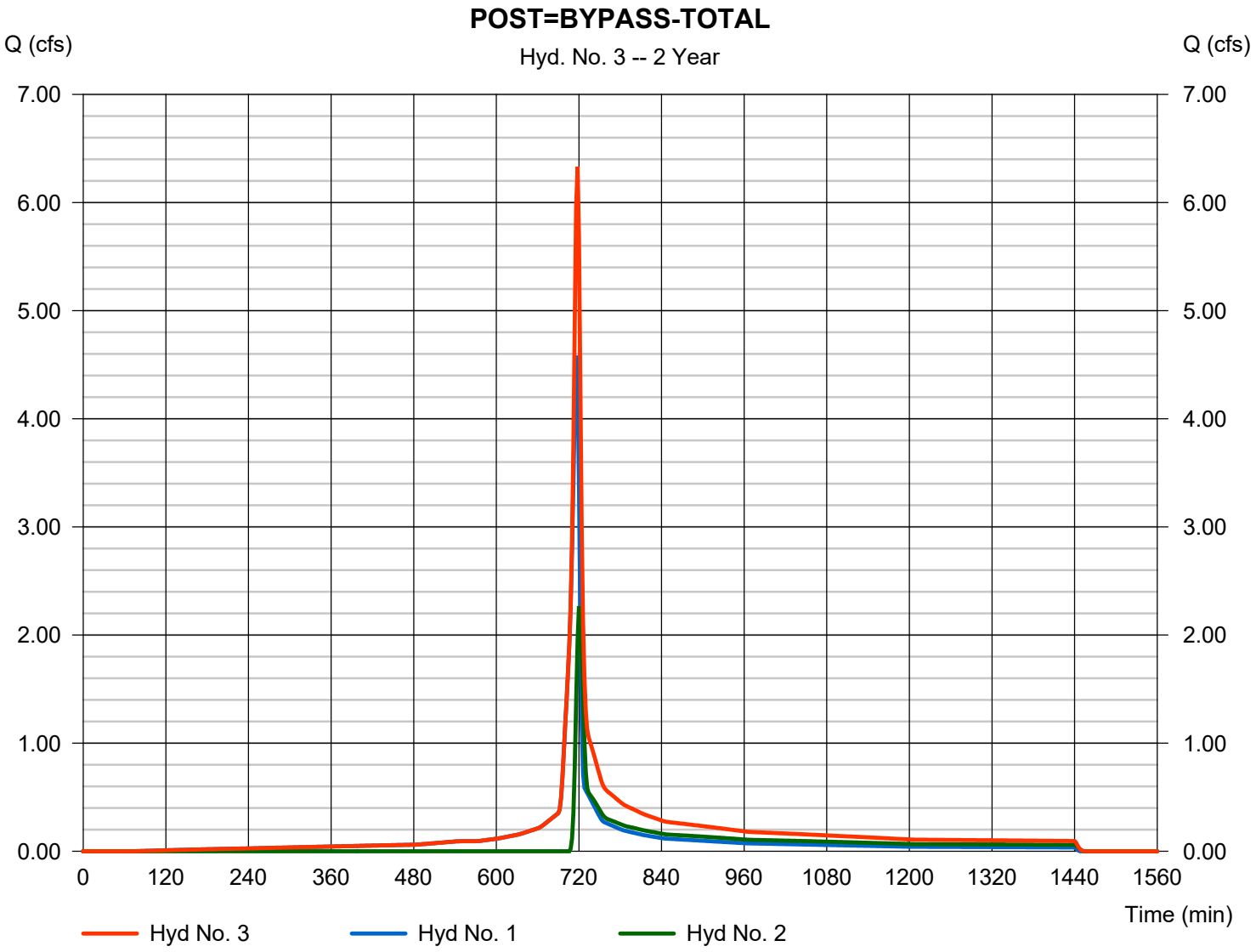
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Monday, 12 / 7 / 2020

Hyd. No. 3

POST=BYPASS-TOTAL

Hydrograph type	= Combine	Peak discharge	= 6.329 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 17,395 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 4.922 ac



Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	35.6114	9.4000	0.8202	--------
2	33.3274	8.5000	0.7586	--------
3	0.0000	0.0000	0.0000	--------
5	34.6417	7.8000	0.7293	--------
10	42.2492	9.0000	0.7389	--------
25	56.1383	11.1000	0.7651	--------
50	84.7712	15.2000	0.8066	--------
100	84.0871	15.4000	0.7726	--------

File name: Region5.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	4.00	3.13	2.59	2.22	1.96	1.75	1.59	1.45	1.34	1.25	1.17	1.10
2	4.63	3.64	3.04	2.63	2.32	2.09	1.91	1.75	1.63	1.52	1.43	1.35
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	5.40	4.24	3.54	3.07	2.72	2.45	2.24	2.06	1.92	1.80	1.69	1.60
10	6.01	4.80	4.04	3.51	3.12	2.82	2.58	2.38	2.22	2.08	1.96	1.85
25	6.70	5.45	4.63	4.05	3.61	3.27	3.00	2.77	2.58	2.41	2.27	2.15
50	7.51	6.28	5.43	4.80	4.31	3.92	3.60	3.34	3.11	2.92	2.75	2.60
100	8.18	6.91	6.01	5.34	4.83	4.41	4.07	3.78	3.54	3.33	3.14	2.98

Tc = time in minutes. Values may exceed 60.

e name: C:\Users\Patrick Spellman\Desktop\1 LOCAL FILES\Concordia\Calcs&Data\Hydraflow Files\RadnorNOAA.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.72	3.27	0.00	4.10	4.80	5.80	6.64	7.55
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NOAA Atlas 14, Volume 2, Version 3
Location name: Wayne, Pennsylvania, USA*
Latitude: 40.0522°, Longitude: -75.3835°
Elevation: 424.7 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.348** (0.320-0.379)	**0.414** (0.381-0.451)	**0.485** (0.445-0.528)	**0.535** (0.490-0.582)	**0.594** (0.541-0.646)	**0.634** (0.574-0.689)	**0.673** (0.607-0.733)	**0.706** (0.634-0.772)	**0.744** (0.662-0.816)	**0.773** (0.682-0.851)
10-min	**0.556** (0.512-0.605)	**0.662** (0.610-0.721)	**0.777** (0.713-0.845)	**0.856** (0.784-0.931)	**0.946** (0.862-1.03)	**1.01** (0.914-1.10)	**1.07** (0.965-1.17)	**1.12** (1.00-1.22)	**1.18** (1.05-1.29)	**1.22** (1.07-1.34)
15-min	**0.694** (0.639-0.756)	**0.833** (0.766-0.906)	**0.983** (0.901-1.07)	**1.08** (0.992-1.18)	**1.20** (1.09-1.31)	**1.28** (1.16-1.39)	**1.35** (1.22-1.47)	**1.41** (1.27-1.54)	**1.48** (1.32-1.63)	**1.53** (1.35-1.68)
30-min	**0.952** (0.877-1.04)	**1.15** (1.06-1.25)	**1.40** (1.28-1.52)	**1.57** (1.44-1.71)	**1.78** (1.62-1.93)	**1.93** (1.74-2.09)	**2.07** (1.87-2.26)	**2.20** (1.97-2.40)	**2.36** (2.10-2.59)	**2.47** (2.18-2.72)
60-min	**1.19** (1.09-1.29)	**1.44** (1.33-1.57)	**1.79** (1.64-1.95)	**2.04** (1.87-2.22)	**2.37** (2.16-2.57)	**2.61** (2.36-2.84)	**2.85** (2.57-3.11)	**3.09** (2.77-3.37)	**3.38** (3.01-3.71)	**3.61** (3.19-3.98)
2-hr	**1.42** (1.30-1.56)	**1.73** (1.58-1.89)	**2.15** (1.97-2.36)	**2.48** (2.26-2.71)	**2.91** (2.63-3.17)	**3.24** (2.91-3.54)	**3.58** (3.19-3.91)	**3.91** (3.47-4.29)	**4.36** (3.82-4.80)	**4.71** (4.08-5.20)
3-hr	**1.55** (1.42-1.71)	**1.88** (1.72-2.07)	**2.35** (2.15-2.58)	**2.71** (2.47-2.97)	**3.19** (2.88-3.49)	**3.57** (3.20-3.90)	**3.95** (3.52-4.32)	**4.33** (3.83-4.75)	**4.85** (4.23-5.34)	**5.24** (4.53-5.80)
6-hr	**1.94** (1.77-2.13)	**2.34** (2.14-2.57)	**2.91** (2.66-3.20)	**3.37** (3.07-3.70)	**4.02** (3.62-4.40)	**4.54** (4.06-4.97)	**5.08** (4.51-5.57)	**5.65** (4.96-6.20)	**6.45** (5.56-7.11)	**7.09** (6.02-7.85)
12-hr	**2.35** (2.15-2.61)	**2.84** (2.59-3.15)	**3.56** (3.24-3.93)	**4.15** (3.77-4.59)	**5.01** (4.50-5.52)	**5.74** (5.10-6.31)	**6.52** (5.72-7.19)	**7.37** (6.38-8.13)	**8.59** (7.28-9.52)	**9.61** (8.00-10.7)
24-hr	**2.72** (2.49-2.97)	**3.27** (3.00-3.58)	**4.10** (3.76-4.48)	**4.80** (4.38-5.24)	**5.80** (5.27-6.32)	**6.64** (6.01-7.23)	**7.55** (6.80-8.21)	**8.53** (7.63-9.27)	**9.96** (8.81-10.8)	**11.2** (9.76-12.1)
2-day	**3.13** (2.86-3.43)	**3.78** (3.46-4.14)	**4.75** (4.34-5.20)	**5.54** (5.05-6.06)	**6.66** (6.05-7.27)	**7.59** (6.87-8.27)	**8.58** (7.71-9.35)	**9.63** (8.61-10.5)	**11.1** (9.87-12.1)	**12.4** (10.9-13.5)
3-day	**3.30** (3.03-3.62)	**3.98** (3.65-4.36)	**4.99** (4.57-5.46)	**5.81** (5.31-6.35)	**6.97** (6.34-7.61)	**7.93** (7.19-8.65)	**8.95** (8.07-9.76)	**10.0** (9.00-11.0)	**11.6** (10.3-12.7)	**12.9** (11.3-14.0)
4-day	**3.47** (3.19-3.81)	**4.18** (3.84-4.59)	**5.23** (4.80-5.73)	**6.08** (5.57-6.65)	**7.29** (6.64-7.96)	**8.28** (7.52-9.03)	**9.33** (8.43-10.2)	**10.4** (9.39-11.4)	**12.0** (10.7-13.2)	**13.3** (11.8-14.6)
7-day	**4.06** (3.76-4.42)	**4.87** (4.50-5.30)	**6.02** (5.56-6.56)	**6.96** (6.42-7.58)	**8.31** (7.63-9.04)	**9.43** (8.61-10.2)	**10.6** (9.65-11.5)	**11.9** (10.7-12.9)	**13.7** (12.2-14.9)	**15.1** (13.4-16.5)
10-day	**4.62** (4.29-4.99)	**5.52** (5.13-5.96)	**6.73** (6.24-7.27)	**7.70** (7.13-8.32)	**9.06** (8.36-9.77)	**10.2** (9.34-11.0)	**11.3** (10.3-12.2)	**12.5** (11.4-13.5)	**14.1** (12.8-15.3)	**15.5** (13.9-16.7)
20-day	**6.24** (5.84-6.69)	**7.41** (6.94-7.93)	**8.84** (8.27-9.47)	**9.96** (9.31-10.7)	**11.5** (10.7-12.3)	**12.7** (11.8-13.5)	**13.9** (12.8-14.8)	**15.1** (13.9-16.1)	**16.7** (15.3-17.9)	**17.9** (16.4-19.3)
30-day	**7.78** (7.34-8.23)	**9.16** (8.65-9.70)	**10.7** (10.1-11.3)	**11.9** (11.2-12.6)	**13.4** (12.6-14.2)	**14.6** (13.7-15.4)	**15.7** (14.7-16.7)	**16.9** (15.8-17.9)	**18.4** (17.1-19.5)	**19.5** (18.0-20.7)
45-day	**9.87** (9.37-10.4)	**11.6** (11.0-12.2)	**13.3** (12.6-14.1)	**14.7** (13.9-15.4)	**16.3** (15.4-17.2)	**17.5** (16.6-18.5)	**18.7** (17.6-19.7)	**19.8** (18.6-20.9)	**21.2** (19.9-22.4)	**22.1** (20.8-23.4)
60-day	**11.8** (11.3-12.4)	**13.9** (13.2-14.6)	**15.8** (15.0-16.6)	**17.3** (16.4-18.2)	**19.1** (18.1-20.1)	**20.4** (19.4-21.5)	**21.7** (20.5-22.8)	**22.8** (21.6-24.0)	**24.2** (22.9-25.5)	**25.2** (23.8-26.6)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

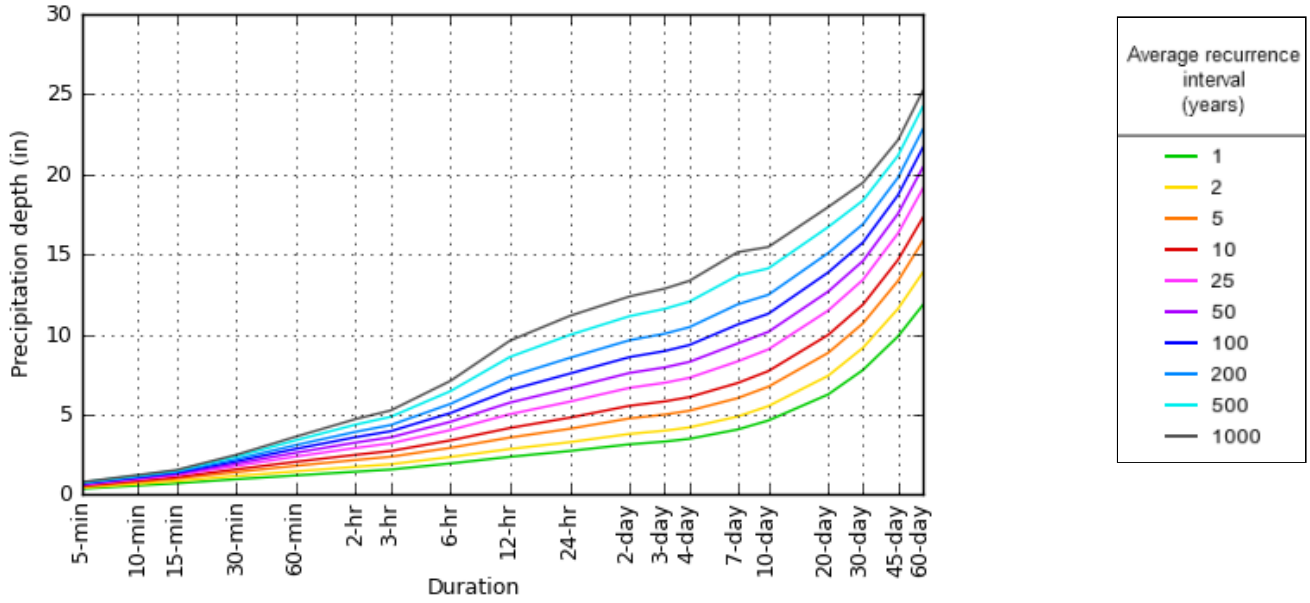
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

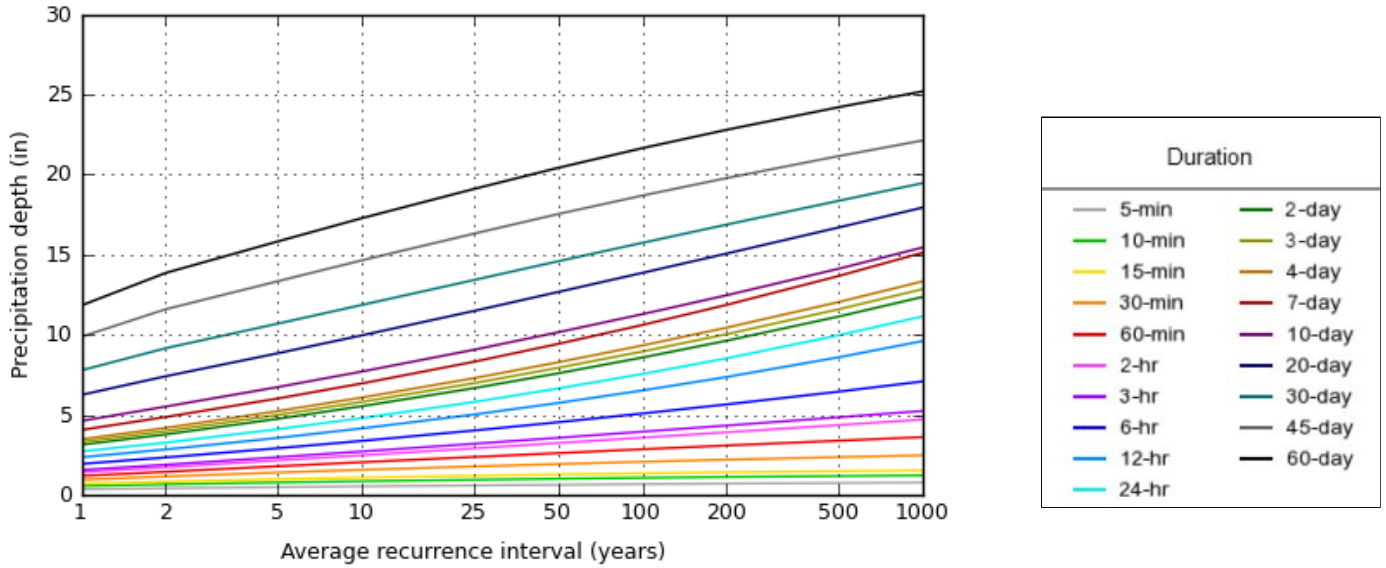
Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 40.0522°, Longitude: -75.3835°





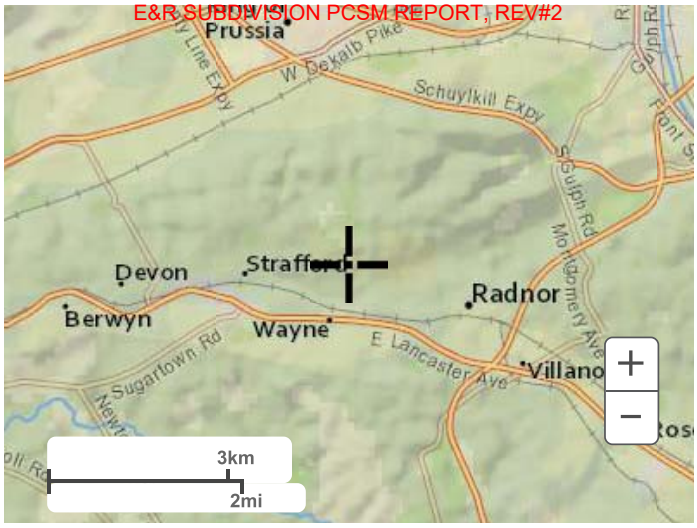
NOAA Atlas 14, Volume 2, Version 3

Created (GMT): Tue Sep 8 17:06:59 2020

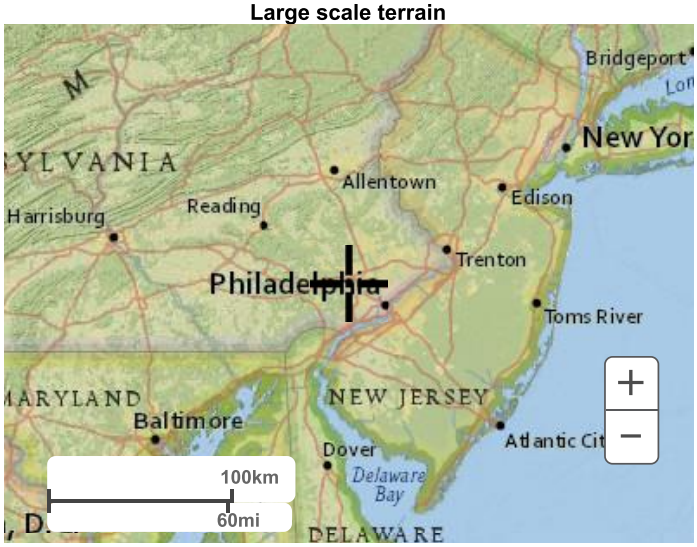
Back to Top

Maps & aerials

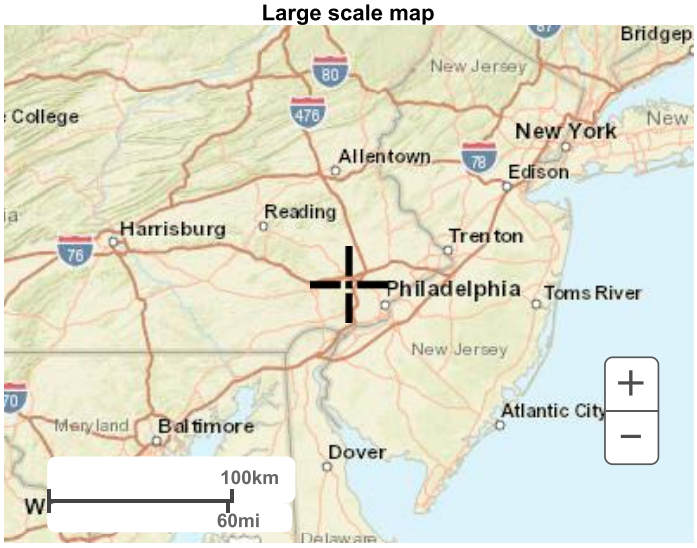
Small scale terrain



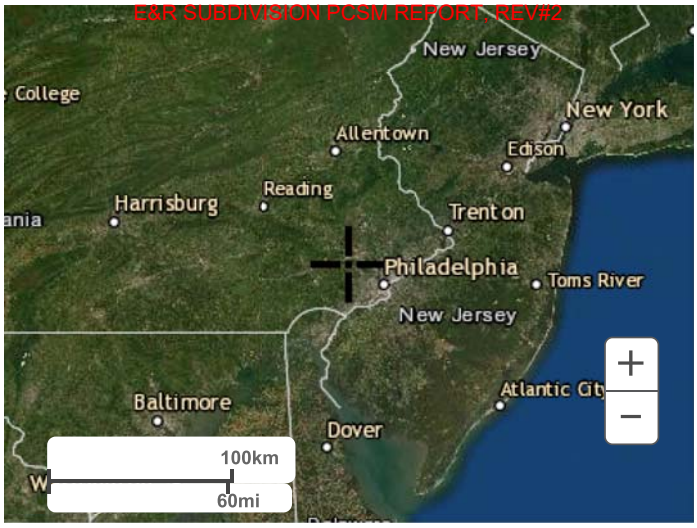
Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

GeoStructures
Bashar S. Qubain, Ph.D., P.E.
Eric J. Seksinsky, P.G., P.E.
Jianchao Li, P.E.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project No. G20-158
May 22, 2020

Mr. Devin Tuohey
The Concordia Group
161 Leverington Avenue, Suite 101
Philadelphia, PA 19127

Re: Infiltration Testing Report
Radnor Street & Eagle Roads Development – Proposed Stormwater Management Facilities
Radnor Street & Eagle Roads, Radnor, PA

Dear Mr. Tuohey:

GeoStructures, Inc. is pleased to submit the enclosed infiltration testing report for the referenced project. The work was conducted in accordance with Proposal No. P20-108 dated March 13, 2020. Our objectives were to explore the subsurface conditions and measure the infiltration rates at the locations marked in the attached plan. This report presents site information and proposed construction, and our characterization of the subsurface soils, results of the field testing, and geotechnical conclusions and recommendations.

SITE INFORMATION & PROPOSED CONSTRUCTION

The subject site is situated at the intersection of Eagle and Radnor Street Roads in Radnor Township PA (Figures 1 & 2). Several houses are nested along the roads with a large paved parking lot in the middle of the project area. The majority of the site is grass covered with shrubs and common tree covered areas around the houses. Based on the Pennsylvania geologic information, the site is underlain by the *Octoraro Formation (Xo)*, which is a phyllite that contains some schist, hornblende gneiss, and granitized members. The southern edge of the site is underlain by the Glenarm Wissahickon" formation (Xgw), that is lithologically similar to oligoclase-mica schist of the Wissahickon Formation but also includes lenticular amphibolite bodies having ocean-floor basalt chemistry. Site geology map is presented in Figure 3.

We understand that the project development involves construction of several stormwater management facilities (SMPs) across the site to accommodate the site development. Several potential areas were investigated at the locations shown in Drawing 1. The test locations and topographic elevations are provided by Site Engineering Concepts.

FIELD EXPLORATION AND SOIL PROFILE CHARACTERIZATIONS

The soil profiles were characterized using 23 test borings distributed over the area as indicated in Drawing 1. The drilling was conducted on May 4 through May 6, 2020 as documented in the attached logs. The subsurface strata were described according to material type, condition, and relative moisture and then checked for hydraulically restrictive layers, limiting zones, and seasonal high water table (SHWT) or zones of saturation. Colors were described using the standard Munsell soil color chart. All of the test borings were dry upon completion. Mottling that are indicative of the seasonal high water table (SHWT) were observed locally in the test borings. Based on refusal depths in the borings, bedrock was encountered within about 12 ft below existing grades locally.

INFILTRATION TESTING

Infiltration testing was carried out at 23 locations using the cased borehole method in accordance with Appendix E of the PADEP BMP Manual. The tests were performed at offset locations near the profile test borings. The tested strata, test elevations, limiting zones, and hydraulically restrictive layers are summarized in Table 1, along with the factored infiltration rates. A safety factor of 2.0 is applied to the adjusted field rates and the resulting factored rates presented in Table 1 can be used for design.

GEOTECHNICAL COMMENTARY AND RECOMMENDATIONS

- Perched water was encountered at SWB-4 and SWB-5. Water also seeped into the test holes prior to the testing and testing were terminated. As such, due to limiting zones in the form of perched water, infiltration is *not* feasible at the planned test depths at these locations.
- Mottles were encountered at test location SWB-7. Also, perched water was encountered at SWB-11B. However, the depths of mottling and perched water are more than 2 ft below the testing levels and infiltration is still feasible at these locations.
- Limiting zone in the form of auger refusal depth on weathered rock was encountered at a depth of 12.0 ft at SWB-17 — However, the test was conducted 2 ft above the refusal depth and infiltration is still feasible here.
- The infiltration test results show variable rates for the various SMP areas. After applying a *recommended* safety factor of 2, the permeability rates as presented in Table 1 fall within the preferred infiltration rates by the PADEP that is between 0.1 in./hr. and 10 in./hr. As such, the soils at the *tested levels* in these areas are favorable for infiltration as described in Table 1. The only exceptions are SWB-1A and SWB-15, where the rates are below 0.1 in./hr. and considered *slow* because of a clay layer at SWB-15 and silt/clay sublayers in the sand at SWB-1A. As such, infiltration is *not* feasible at these two locations.
- GeoStructures should be present during stormwater facility construction to verify the presence of the target strata and to confirm the minimum 2-ft buffer between the bottom of the stormwater beds and any limiting zones.

Please feel free to contact us if you have any questions or require additional information.

Sincerely,

Daniel Eshete

Daniel W. Eshete, P.G.
Project Manager

Attachments

Table 1. Summary of Stormwater Infiltration Testing Results

Radnor Street & Eagle Roads Development

Test Location	Description of Tested Stratum	Exist. Grade [1] El. (ft)	Test El. (ft)	Test Depth [1] (ft)	SHWT El. (ft)	Limiting Zone	Field Rate (in/hr)	Adjusted Infiltr. Rate [2] (in/hr)	FS	Factored Rate[3] (in/hr)	Remarks
1A	Medium dense, light yellowish brown (2.5Y, 6/3), silty sand with gravel (SM), moist (RESIDUAL).	357.50	350.00	7.50	None	No water or rock to 12' (El. 345.5)	0.24	0.16	2.00	0.08	Slow rate and infiltration is *not* feasible.
1B	Loose, dark brown (7.5YR, 3/4), silty sand with gravel (SM), moist to very moist (RESIDUAL).	365.50	358.00	7.50	None	No water or rock to 12' (El. 353.5)	4.80	3.20		1.60	Favorable rate in sandy soils and infiltration is feasible.
2	Medium dense, light olive brown (2.5Y 5/6), silty sand with gravel (SM), moist to damp (RESIDUAL).	359.80	352.30	7.50	None	No water or rock to 12' (El. 347.8)	7.92	5.28		2.64	
3	Medium dense, light olive brown (2.5YR, 5/6), silty sand (SM), moist to damp (RESIDUAL).	365.50	357.50	8.00	None	No water or rock to 12' (El. 353.5)	5.04	3.36		1.68	
4	Stiff to very stiff, yellowish brown (10YR, 5/8) sandy silt (ML), moist (RESIDUAL).	369.00	362.00	7.00	Mottles @9.5'	Perched water @6.5' (El. 362.5')	-	-		-	Perched water seeped into the test hole prior the testing and test was terminated.
5	Medium dense, olive yellow (2.5Y, 6/8), silty fine sand (SM), damp (RESIDUAL).	373.00	365.50	7.50	None	Perched water @4.6' (El. 368.4')	-	-		-	Perched water seeped into the test hole prior the testing and test was terminated.
6	Medium dense, light olive brown (2.5YR 5/4), silty sand with gravel (SM), damp (RESIDUAL).	380.00	368.00	12.00	None	No water or rock to 16' (El. 364.0)	7.92	5.28	2.00	2.64	The mottles at SWB-17 is well below the testing level. Favorable rate in sandy soils and feasible.
7	Med. dense to dense, light olive brown (2.5 YR, 5/4), silty fine sand (SM), occasional rock fragments, damp to moist (RESIDUAL).	383.30	376.30	7.00	Mottles @11.3'	No water or rock to 12' (El. 371.3)	4.32	2.88		1.44	

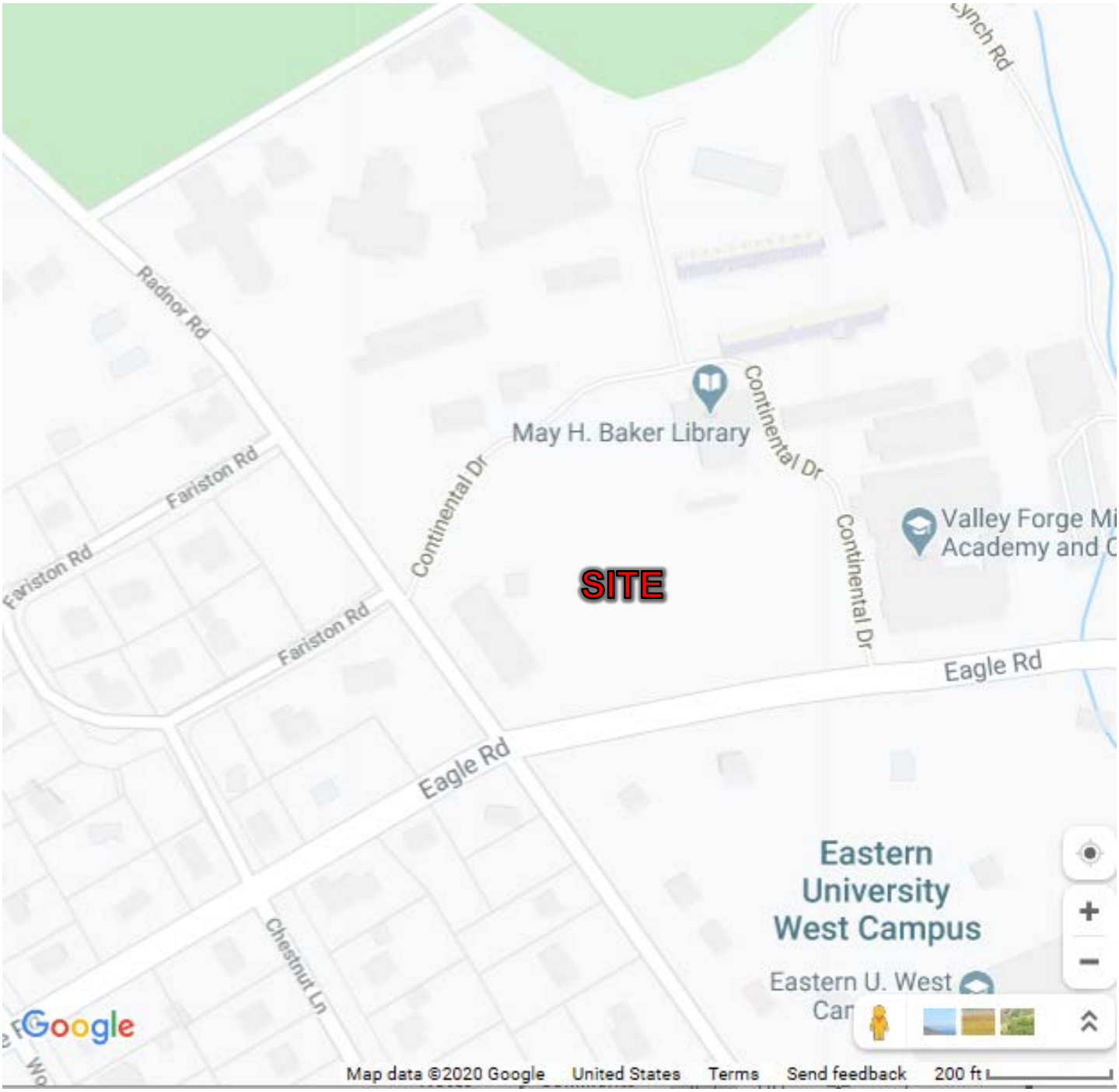
8	Medium dense to dense, light olive brown (2.5YR, 5/4), silty fine sand (SM), damp (RESIDUAL).	381.30	375.30	6.00	None	No water or rock to 12' (El. 369.3)	5.76	3.84		1.92	Favorable rate in sandy soils and infiltration is feasible.
9	Medium dense, light olive brown (2.5YR, 5/4), silty fine sand (SM), damp (RESIDUAL).	376.50	367.50	9.00	None	No water or rock to 14' (El. 352.5)	7.44	4.96		2.48	
10	Loose to medium dense, yellowish brown (10YR, 5/6), silty fine sand (SM), moist (RESIDUAL).	374.50	368.00	6.50	None	No water or rock to 12' (El. 362.5)	2.16	1.44	2.00	0.72	Relatively *marginal* rates but rates are still above 0.1 in./hr. after applying a fsafety factor of 2. Infiltration is still considered feasible.
11A	Medium dense, light yellowish brown (10YR, 6/4), silty sand (SM), moist (RESIDUAL).	370.00	364.00	6.00	None	No water or rock to 10' (El. 360.0)	0.72	0.48		0.24	
11B	Soft, dark yellowish brown (10YR, 5/8), sandy lean clay (CL), very moist, micaceous (RESIDUAL).	365.00	361.00	4.00	None	Perched water @6.4' (El. 358.6')	1.92	0.77		0.39	Perched water is more than 2 ft below the testing level. The marginal rate is above 0.1 in./hr. and infiltration is still feasible.
12	Loose, dark yellowish brown (10 YR 4/6), silty sand (SM), damp (RESIDUAL).	383.50	379.50	4.00	None	No water or rock to 10' (El. 373.5)	1.68	1.12		0.56	Relatively marginal rates but rates are still above 0.1 in./hr. after applying a fsafety factor of 2. Infiltration is still considered feasible.
13	Loose, light olive brown (2.5Y, 5/4) silty fine sand (SM), damp to moist (RESIDUAL).	385.50	381.50	4.00	None	No water or rock to 10' (El. 364.0)	0.96	0.64		0.32	
14	Loose, brownish yellow (10YR 6/8), silty fine sand (SM), damp (RESIDUAL).	392.00	387.00	5.00	None	No water or rock to 10' (El. 382.0)	1.44	0.96		0.48	
15	Medium to stiff, brownish yellow (10YR, 6/8), silty lean clay with sand (CL), moist.	394.50	387.75	6.75	None	No water or rock to 12' (El. 382.5)	0.24	0.16	2.00	0.08	Slow rate and infiltration is *not* feasible.
16	Medium dense, dark yellowish brown (10YR, 4/6), silty sand (SM), trace friable rock fragments, moist to damp (RESIDUAL).	407.50	400.50	7.00	None	No water or rock to 12' (El. 395.5)	7.92	5.28		2.64	Favorable rate in sandy soils and infiltration is feasible.

17	Medium dense, yellowish red (5YR, 5/8), silty sand with rock fragments (SM), micaceous, moist to damp (RESIDUAL).	427.50	417.50	10.00	None	Auger Refusal @ 12' (El.415.5)	15.60	7.88	2.00	3.94	Favorable rate in sandy soils and infiltration is feasible.
18	Loose, yellowish brown (10YR, 5/8), silty sand (SM), micaceous, damp (RESIDUAL).	407.00	400.70	6.30	None	No water or rock to 12' (El. 395.0)	2.16	1.44		0.72	
19	Medium dense, strong brown (7.5YR 5/8), silty sand with rock fragments (SM), micaceous, damp.	406.50	396.00	10.50	None	No water or rock to 16' (El. 300.5)	4.32	2.88		1.44	
20	Medium dense, reddish yellow (7.5YR 6/8), silty sand (SM), micaceous, trace to little rocks fragments, moist to damp.	394.00	387.50	6.50	None	No water or rock to 12' (El. 382.0)	5.76	3.84		1.92	
21	Loose to medium dense, reddish yellow (7.5YR, 6/8), silty sand (SM), micaceous, trace rock fragments, moist to damp.	377.50	370.00	7.50	None	No water or rock to 12' (El. 365.5)	13.20	8.80		4.40	

[1] Existing grade elevations and testing depths are provided by Site Engineering Concepts.

[2] Reduction factors were applied to adjust the field measured infiltration rates for the *cased borehole* method per PADEP BMP Manual Appendix E.

[3] Also, for design purposes a recommended safety factor of 2 was applied on to the adjusted infiltration rates.



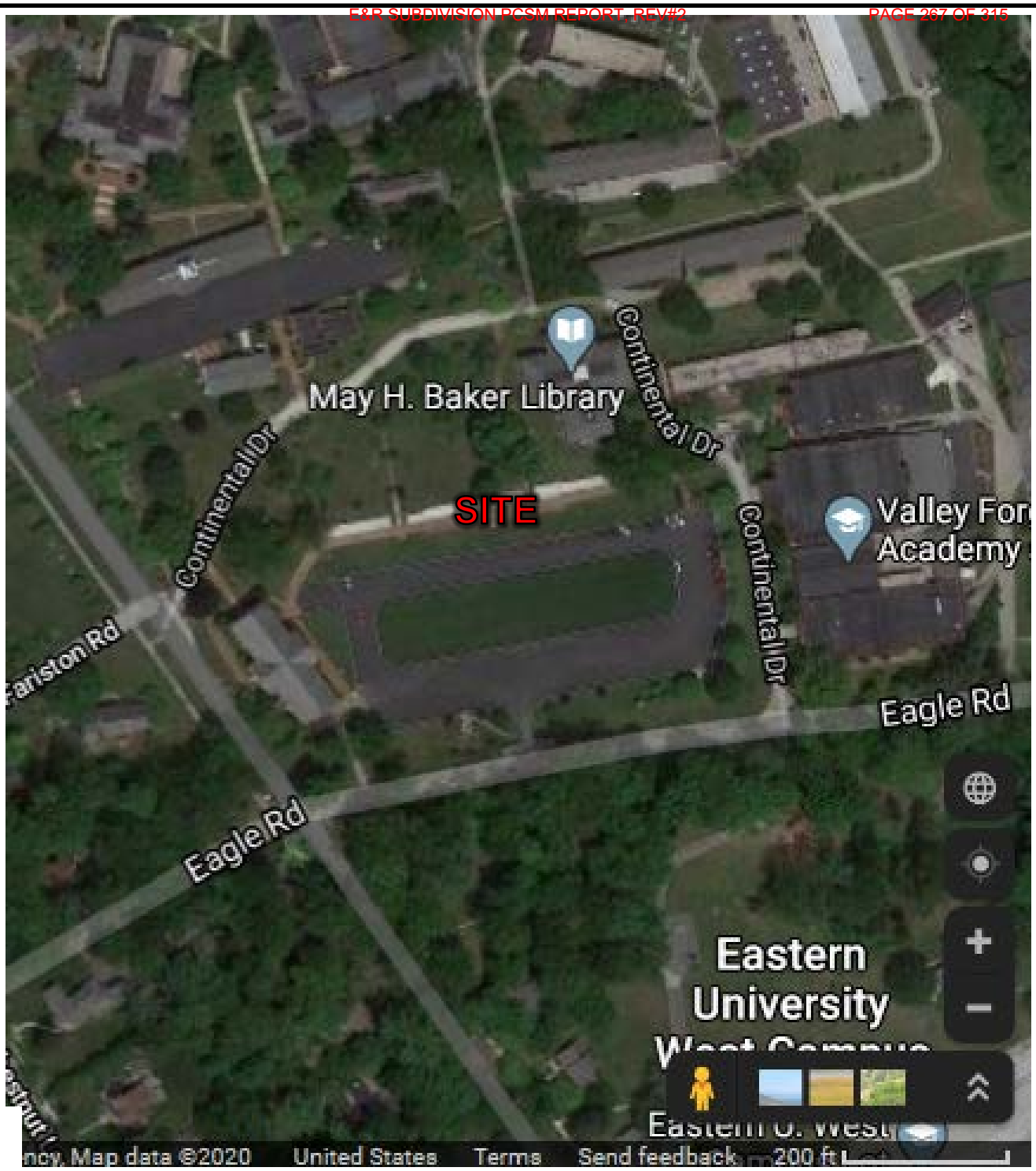
Source:

"Bing Maps in Google Earth." *Bing Maps in Google Earth*. N.p., n.d. Web. 5/21/2020. < http://ge-map-overlays.appspot.com/bing-maps/road >.

GeoStructures

FIGURE 1. SITE LOCATION MAP

RADNOR STREET & EAGLE ROADS DEVELOPMENT
RADNOR STREET & EAGLE ROADS, RADNOR PA



Source:

"*Bing Maps in Google Earth*. N.p., n.d. Web. 5/21/2020. < http://ge-map-overlays.appspot.com/bing-maps/road >.

GeoStructures

FIGURE 2. SITE AERIAL MAP

RADNOR STREET & EAGLE ROADS DEVELOPMENT
RADNOR STREET & EAGLE ROADS, RADNOR PA

Xo: Octoraro Formation (Probably lower Paleozoic):
Includes albite-chlorite schist, phyllite, some hornblende gneiss, and granitized members.

Xgw: "Glenarm Wissahickon" formation (Probably lower Paleozoic):
Lithologically similar to oligoclase-mica schist of the Wissahickon Formation (PZw), but also includes lenticular amphibolite bodies having ocean-floor basalt chemistry.

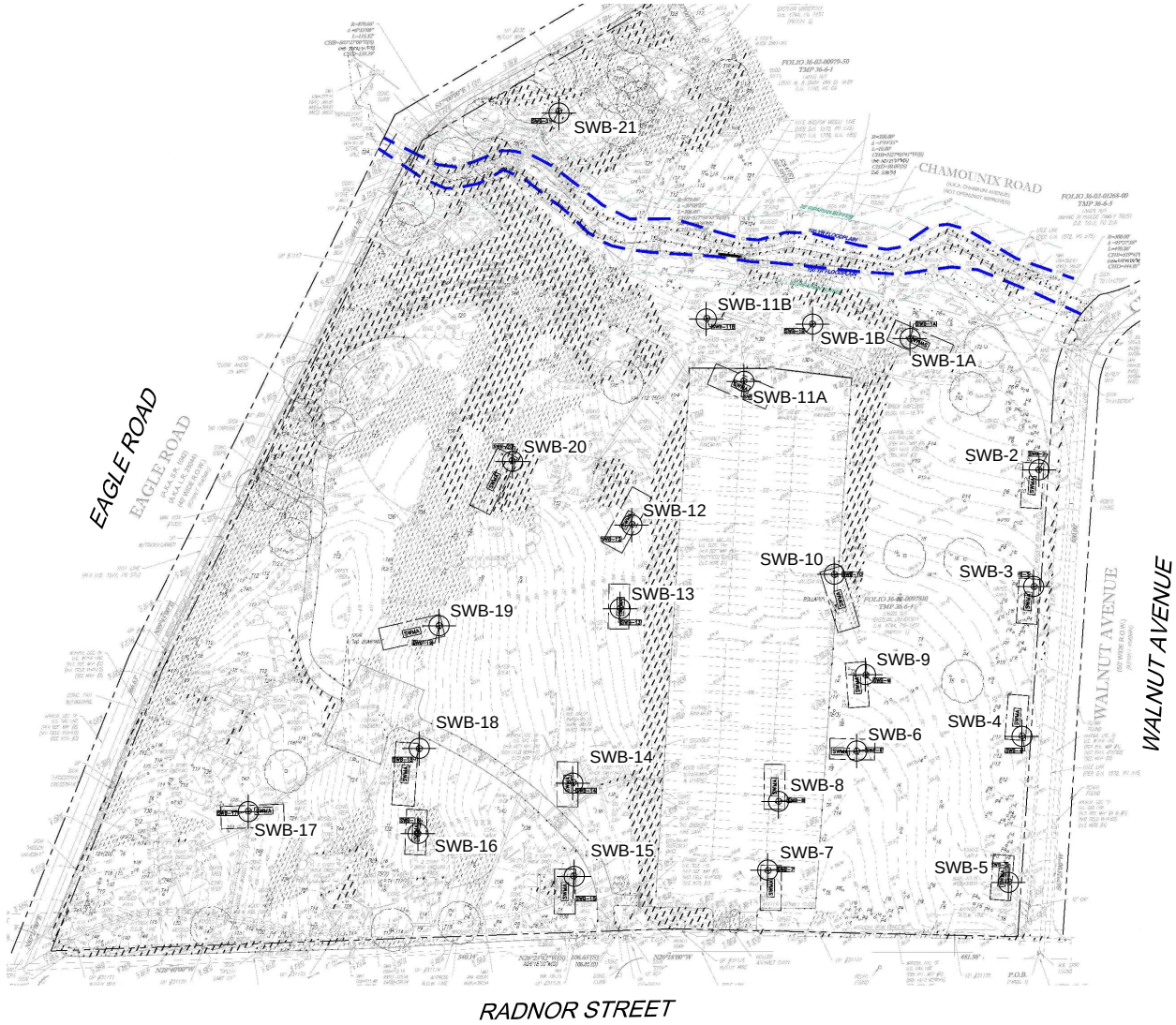
Sources:

1. Google Maps in Google Earth.
2. Bedrock Geologic Map of Pennsylvania by Socolow, A.A. & Berg, T.M., 1978.

GeoStructures

FIGURE 3. SITE GEOLOGIC MAP

RADNOR STREET & EAGLE ROADS DEVELOPMENT
RADNOR STREET & EAGLE ROADS, RADNOR PA



LEGEND

INFILTRATION TEST

200' 100' 0 200'

SCALE: 1" = 200'

NOTE: THIS DRAWING IS BASED ON A SITE PLAN PREPARED BY SITE ENGINEERING CONCEPTS, DATED 1/15/20.

GeoStructures

GEOTECHNICAL INVESTIGATION PLAN

RADNOR STREET & EAGLE ROADS DEVELOPMENT
RADNOR STREET & EAGLE ROADS, RADNOR, PA

SCALE: 1" = 200'	DRAWN BY: YY	PROJECT NO: G20-158
DATE: 5/19/2020	CHECKED BY: DWE	DRAWING NO: 1

PLOTTED: 5/19/2020 10:29:09 PM | BY: YIZHEN YAN | PLOTSTYLE:GSI_HALF.CTB | PLOTTER:DWG TO PDF.PC3
FILE PATH: DRAWING1.DWG

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-1A**
Date	5/6/2020
Sheet No.	1 of 1
Weather	50s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	357.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	7.50
Test Bottom Elevation (ft)	350.0

Soil Conditions at Test Level:
Medium dense, light yellowish brown (2.5Y, 6/3), silty sand with gravel (SM), moist (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	1.32	in
Water Drop During Final Presoak	0.12	in

Test:

Test Start Time	12:10 PM	
Time interval selected:	30	minutes
Water level at start of test	8.54	ft

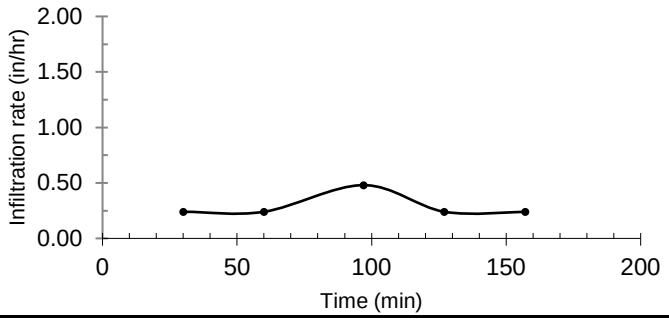
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	12:40 PM	8.55	0.01	12:41 PM	8.55	0.24
2	1:11 PM	8.51	0.01	1:11 PM	8.51	0.24
3	1:41 PM	8.53	0.02	1:41 PM	8.53	0.48
4	2:11 PM	8.54	0.01	2:11 PM	8.53	0.24
5	2:41 PM	8.54	0.01			0.24

Total Length of Test (hr) 2:31

Field Rate During Final Reading (in./hr) **0.24**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-1A for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/6/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/13/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-1B**
Date	5/6/2020
Sheet No.	1 of 1
Weather	50s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	365.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	7.50
Test Bottom Elevation (ft)	358.0

Soil Conditions at Test Level:
Loose, dark brown (7.5YR, 3/4), silty sand with gravel (SM), moist to very moist (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	2.64	in
Water Drop During Final Presoak	1.80	in

Test:

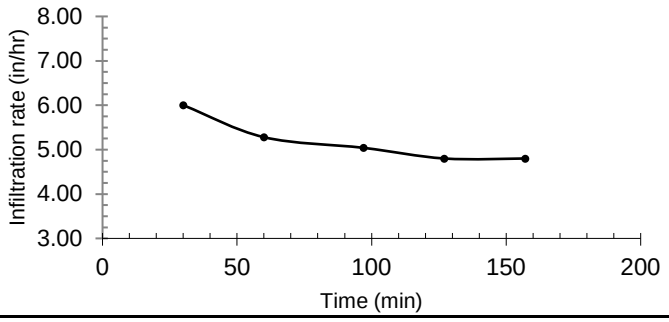
Test Start Time	11:13 AM	
Time interval selected:	30	minutes
Water level at start of test	9.01	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:43 AM	9.26	0.25	11:45 AM	9.09	6.00
2	12:15 PM	9.31	0.22	12:16 PM	9.09	5.28
3	12:46 PM	9.30	0.21	12:47 PM	9.15	5.04
4	1:17 PM	9.35	0.20	1:19 PM	9.10	4.80
5	1:49 PM	9.30	0.20			4.80

Total Length of Test (hr)	2:36
Field Rate During Final Reading (in./hr)	**4.80**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-1B for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/6/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-2**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	359.8
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	7.50
Test Bottom Elevation (ft)	352.3

Soil Conditions at Test Level:
Medium dense, light olive brown (2.5YR, 5/6), silty sand with gravel (SM), moist to damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	3.12	in
Water Drop During Final Presoak	0.84	in

Test:

Test Start Time	4:17 PM	
Time interval selected:	30	minutes
Water level at start of test	9.16	ft

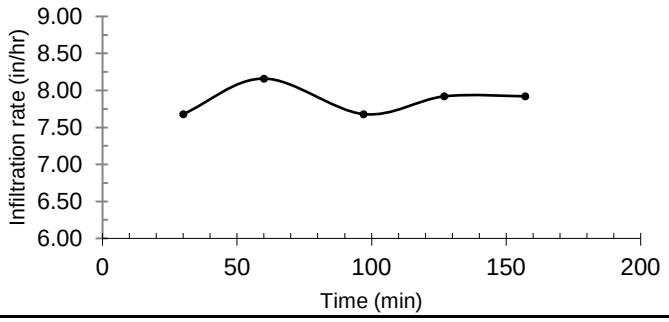
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	4:49 PM	9.48	0.32	5:50 PM	9.12	7.68
2	5:20 PM	9.46	0.34	6:22 PM	9.16	8.16
3	5:52 PM	9.48	0.32	6:57 PM	9.17	7.68
4	6:27 PM	9.50	0.33	7:29 PM	9.17	7.92
5	6:59 PM	9.50	0.33			7.92

Total Length of Test (hr) 2:42

Field Rate During Final Reading (in./hr) **7.92**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-2 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-3**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	365.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	8.00
Test Bottom Elevation (ft)	357.5

Soil Conditions at Test Level:
Medium dense, light olive brown (2.5YR, 5/6), silty sand (SM), moist to damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	2.88	in
Water Drop During Final Presoak	1.32	in

Test:

Test Start Time	4:09 PM	
Time interval selected:	30	minutes
Water level at start of test	9.00	ft

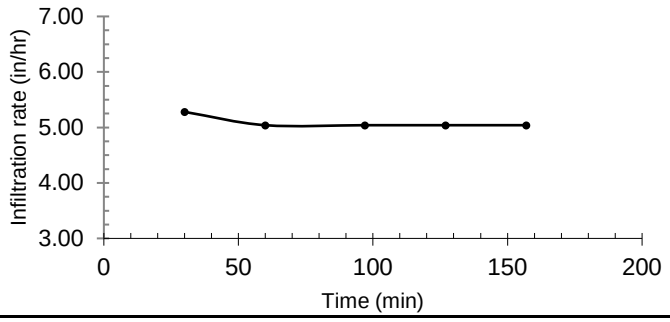
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	4:40 PM	9.22	0.22	5:41 PM	8.94	5.28
2	5:11 PM	9.15	0.21	6:12 PM	8.99	5.04
3	5:42 PM	9.20	0.21	6:44 PM	8.97	5.04
4	6:14 PM	9.18	0.21	7:16 PM	8.97	5.04
5	6:45 PM	9.18	0.21			5.04

Total Length of Test (hr) 2:05

Field Rate During Final Reading (in./hr) **5.04**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-3 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-4**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	369.0	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Stiff to very stiff, yellowish brown (10YR, 5/8) sandy silt (ML), moist (RESIDUAL).
Depth of Hole (ft)	7.00	
Test Bottom Elevation (ft)	362.0	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:			**Test:**		
Water Drop During Initial Presoak	0.00	in	**Test Start Time**	4:28 PM	
Water Drop During Final Presoak	0.00	in	**Time interval selected:**	30	minutes
			Water level at start of test		ft

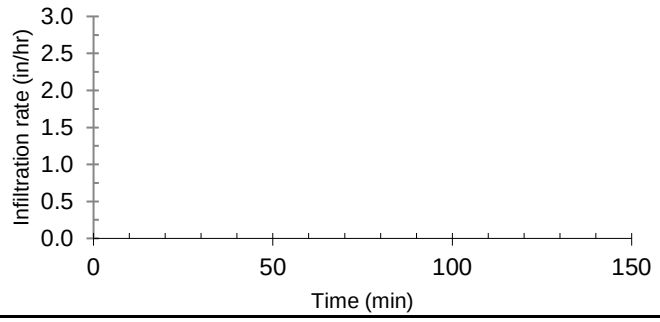
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
Note: Perched water seeped into the test hole prior the testing and terminated.						

Total Length of Test (hr)

Field Rate During Final Reading (in./hr) **0.00**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-3 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-5**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	373.0	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Medium dense, olive yellow (2.5Y, 6/8), silty fine sand (SM), damp (RESIDUAL).
Depth of Hole (ft)	7.50	
Test Bottom Elevation (ft)	365.5	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:			**Test:**	
Water Drop During Initial Presoak	0.00	in	**Test Start Time**	
Water Drop During Final Presoak	0.00	in	**Time interval selected:**	minutes
			Water level at start of test	ft

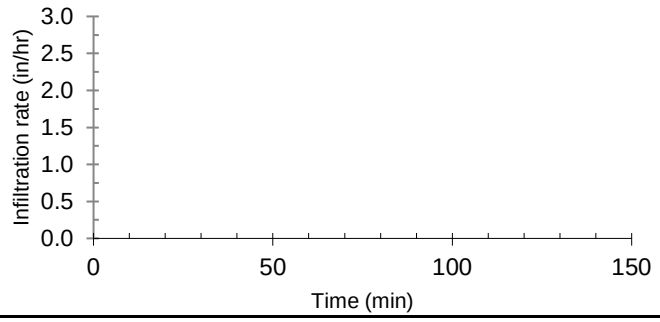
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
Note: Perched water seeped into the test hole prior the testing and terminated.						

Total Length of Test (hr)

Field Rate During Final Reading (in./hr) **0.00**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-3 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-6**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	380.0
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	12.00
Test Bottom Elevation (ft)	368.0

Soil Conditions at Test Level:
Medium dense, light olive brown (2.5YR 5/4), silty sand with gravel (SM), damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	1.80	in
Water Drop During Final Presoak	2.40	in

Test:

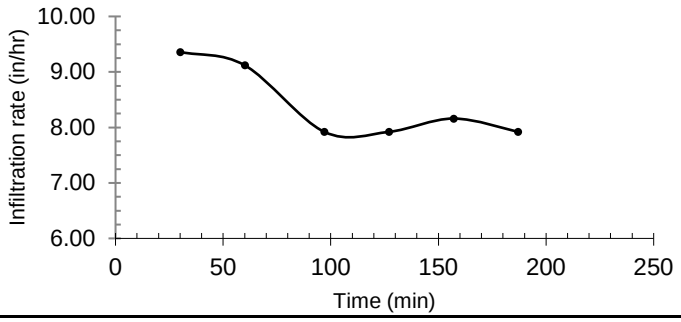
Test Start Time	9:26 AM	
Time interval selected:	30	minutes
Water level at start of test	10.55	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:01 AM	10.94	0.39	11:02 AM	10.53	9.36
2	11:32 AM	10.91	0.38	11:34 AM	10.55	9.12
3	12:04 PM	10.88	0.33	12:05 PM	10.52	7.92
4	12:35 PM	10.85	0.33	12:36 PM	10.50	7.92
5	1:06 PM	10.84	0.34	1:07 PM	10.53	8.16
6	1:37 PM	10.86	0.33			7.92

Total Length of Test (hr)	4:11
Field Rate During Final Reading (in./hr)	**7.92**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-6 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-7**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	383.3
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	7.00
Test Bottom Elevation (ft)	376.3

Soil Conditions at Test Level:
Medium dense to dense, light olive brown (2.5 YR, 5/4), silty fine sand (SM), includes occasional rock fragments, damp to moist (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	3.00	in
Water Drop During Final Presoak	1.20	in

Test:

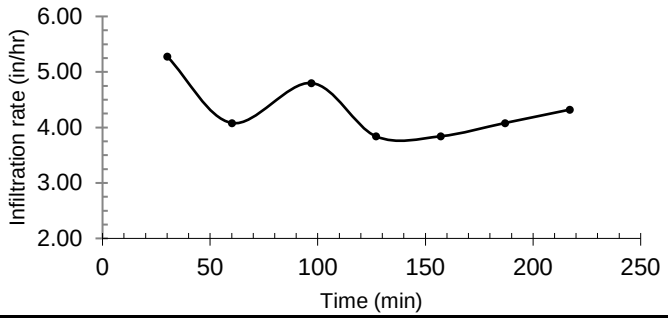
Test Start Time	9:06 AM	
Time interval selected:	30	minutes
Water level at start of test	8.85	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	10:39 AM	9.07	0.22	10:41 AM	8.93	5.28
2	11:11 AM	9.10	0.17	11:14 AM	8.85	4.08
3	11:44 AM	9.05	0.20	11:45 AM	8.86	4.80
4	12:15 PM	9.02	0.16	12:16 PM	8.82	3.84
5	12:46 PM	8.98	0.16	12:49 PM	8.83	3.84
6	1:19 PM	9.00	0.17	1:20 PM	8.82	4.08
7	1:50 PM	9.00	0.18			4.32

Total Length of Test (hr)	4:44
Field Rate During Final Reading (in./hr)	**4.32**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-7 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-8**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	381.3
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	6.00
Test Bottom Elevation (ft)	375.3

Soil Conditions at Test Level:
Medium dense to dense, light olive brown (2.5YR, 5/4), silty fine sand (SM), damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	4.80	in
Water Drop During Final Presoak	1.80	in

Test:

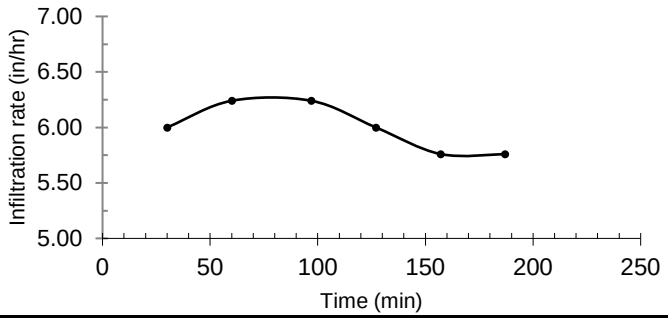
Test Start Time	8:48 AM	
Time interval selected:	30	minutes
Water level at start of test	6.00	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	10:19 AM	6.25	0.25	10:23 AM	6.00	6.00
2	10:53 AM	6.26	0.26	10:54 AM	5.99	6.24
3	11:24 AM	6.25	0.26	11:25 AM	5.95	6.24
4	11:55 AM	6.20	0.25	11:56 AM	5.98	6.00
5	12:26 PM	6.22	0.24	12:27 PM	5.98	5.76
6	12:57 PM	6.22	0.24			5.76

Total Length of Test (hr)	4:09
Field Rate During Final Reading (in./hr)	**5.76**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-8 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-9**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	376.5	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Medium dense, light olive brown (2.5YR, 5/4), silty fine sand (SM), damp (RESIDUAL).
Depth of Hole (ft)	9.00	
Test Bottom Elevation (ft)	367.5	**Test Method:** Percolation test in cased boreholes per PADEP.

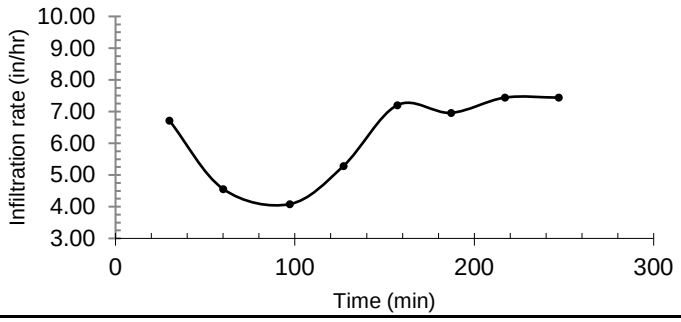
Presoak:			**Test:**		
Water Drop During Initial Presoak	4.20	in	**Test Start Time**	9:30 AM	
Water Drop During Final Presoak	2.04	in	**Time interval selected:**	30	minutes
			Water level at start of test	8.70	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:07 AM	8.98	0.28	11:09 AM	8.38	6.72
2	11:39 AM	8.57	0.19	11:40 AM	8.40	4.56
3	12:10 PM	8.57	0.17	12:11 PM	8.41	4.08
4	12:41 PM	8.63	0.22	12:42 PM	8.35	5.28
5	1:12 PM	8.65	0.30	1:13 PM	8.34	7.20
6	1:43 PM	8.63	0.29	1:46 PM	8.29	6.96
7	2:16 PM	8.60	0.31	2:17 PM	8.29	7.44
8	2:47 PM	8.60	0.31			7.44

Total Length of Test (hr)	5:17
Field Rate During Final Reading (in./hr)	**7.44**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-9 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-10**
Date	5/6/2020
Sheet No.	1 of 1
Weather	50s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	374.5	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Loose to medium dense, yellowish brown (10YR, 5/6), silty fine sand (SM), moist (RESIDUAL).
Depth of Hole (ft)	6.50	
Test Bottom Elevation (ft)	368.0	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	1.56	in
Water Drop During Final Presoak	3.00	in

Test:

Test Start Time	10:11 AM	
Time interval selected:	30	minutes
Water level at start of test	5.85	ft

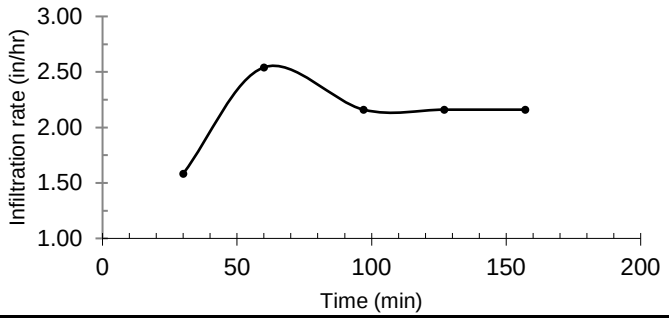
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:01 AM	5.96	0.11	11:02 AM	5.42	1.58
2	11:36 AM	5.54	0.12	11:36 AM	5.59	2.54
3	12:06 PM	5.68	0.09	12:07 PM	5.21	2.16
4	12:37 PM	5.30	0.09	12:37 PM	5.21	2.16
5	1:07 PM	5.30	0.09			2.16

Total Length of Test (hr) 2:56

Field Rate During Final Reading (in./hr) **2.16**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-10 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/6/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-11A**
Date	5/6/2020
Sheet No.	1 of 1
Weather	50s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	370.0
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	6.00
Test Bottom Elevation (ft)	364.0

Soil Conditions at Test Level:
Medium dense, light yellowish brown (10YR, 6/4), silty sand (SM), moist (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	0.24	in
Water Drop During Final Presoak	0.12	in

Test:

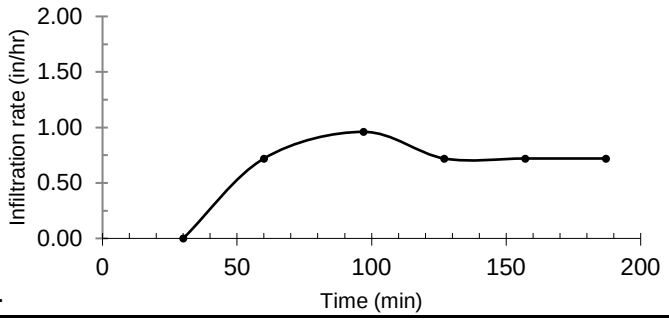
Test Start Time	11:38 AM	
Time interval selected:	30	minutes
Water level at start of test	8.79	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	12:08 PM	8.79	0.00	12:09 PM	8.26	0.00
2	12:39 PM	8.29	0.03	12:40 PM	8.18	0.72
3	1:10 PM	8.22	0.04	1:10 PM	8.22	0.96
4	1:40 PM	8.25	0.03	1:41 PM	8.30	0.72
5	2:11 PM	8.33	0.03	2:12 PM	8.30	0.72
6	2:32 PM	8.33	0.03			0.72

Total Length of Test (hr)	2:54
Field Rate During Final Reading (in./hr)	**0.72**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.
* Fine-grained soil from 0.3' to 6.0' and test depth was taken deeper into a sandier soil per Site Engineering Concepts.



Notes

1. Refer to test boring SWB-11A for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/6/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-11B**
Date	5/6/2020
Sheet No.	1 of 1
Weather	50s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	365.0	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Soft, dark yellowish brown (10YR, 5/8), sandy lean clay (CL), very moist, micaceous (RESIDUAL).
Depth of Hole (ft)	4.00	
Test Bottom Elevation (ft)	361.0	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	0.48	in
Water Drop During Final Presoak	0.00	in

Test:

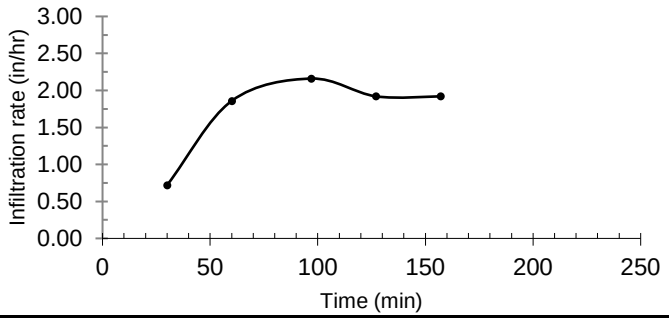
Test Start Time	10:32 AM	
Time interval selected:	30	minutes
Water level at start of test	5.17	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:02 AM	5.20	0.03	11:15 AM	4.79	0.72
2	11:46 AM	4.87	0.08	11:47 AM	4.71	1.86
3	12:17 PM	4.80	0.09	12:17 PM	4.80	2.16
4	12:47 PM	4.88	0.08	12:47 PM	4.75	1.92
5	1:17 PM	4.83	0.08	1:17 PM	4.75	1.92
6	1:47 PM	4.83	0.08			

Total Length of Test (hr)	3:15
Field Rate During Final Reading (in./hr)	**1.92**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.
* Perched water was found at the end of drilling at 6.4 ft so test level was raised to 4 ft per Site Engineering Concepts



Notes

1. Refer to test boring SWB-11A for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/6/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-12**
Date	5/12/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development	**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:** Radnor	**Co.** Delaware

Existing Grade El. (ft)	383.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	4.00
Test Bottom Elevation (ft)	379.5

Soil Conditions at Test Level:
Loose, dark yellowish brown (10 YR 4/6), silty sand (SM), damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	1.08	in
Water Drop During Final Presoak	0.72	in

Test:

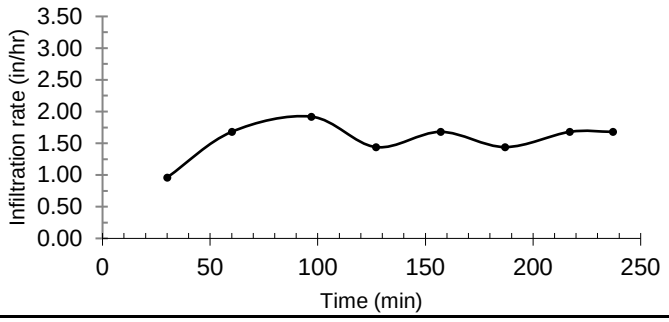
Test Start Time	10:01 AM	
Time interval selected:	30	minutes
Water level at start of test	3.66	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:33 AM	3.70	0.04	11:34 AM	3.63	0.96
2	12:04 PM	3.70	0.07	12:05 PM	3.61	1.68
3	12:35 PM	3.69	0.08	12:36 PM	3.60	1.92
4	1:06 PM	3.66	0.06	1:07 PM	3.57	1.44
5	1:37 PM	3.64	0.07	1:38 PM	3.55	1.68
6	2:08 PM	3.61	0.06	2:08 PM	3.61	1.44
7	2:38 PM	3.68	0.07	2:38 PM	3.61	1.68
8	3:08 PM	3.68	0.07			1.68

Total Length of Test (hr)	5:07
Field Rate During Final Reading (in./hr)	**1.68**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-12 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-13**
Date	5/12/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	385.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	4.00
Test Bottom Elevation (ft)	381.5

Soil Conditions at Test Level:
Loose, light olive brown (2.5Y, 5/4) silty fine sand (SM), damp to moist (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	0.60	in
Water Drop During Final Presoak	0.72	in

Test:

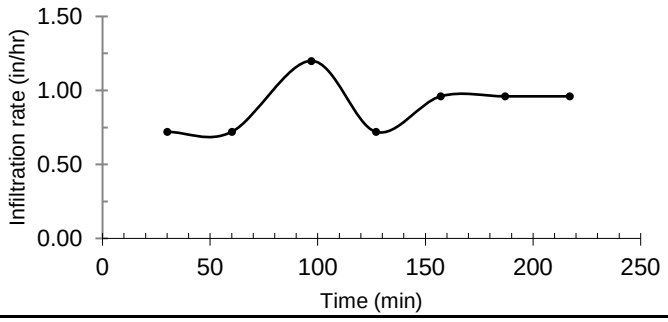
Test Start Time	10:05 AM	
Time interval selected:	30	minutes
Water level at start of test	3.86	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:36 AM	3.89	0.03	11:37 AM	3.86	0.72
2	12:07 PM	3.89	0.03	12:08 PM	3.80	0.72
3	12:38 PM	3.85	0.05	12:39 PM	3.76	1.20
4	1:09 PM	3.79	0.03	1:09 PM	3.79	0.72
5	1:39 PM	3.83	0.04	1:40 PM	3.78	0.96
6	2:10 PM	3.82	0.04	2:11 PM	3.73	0.96
7	2:41 PM	3.77	0.04			0.96

Total Length of Test (hr)	4:36
Field Rate During Final Reading (in./hr)	**0.96**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-13 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-14**
Date	5/8/2020
Sheet No.	1 of 1
Weather	40s°F, P.Rainy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	392.0	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Loose, brownish yellow (10YR 6/8), silty fine sand (SM), damp (RESIDUAL).
Depth of Hole (ft)	5.00	
Test Bottom Elevation (ft)	387.0	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	0.84	in
Water Drop During Final Presoak	0.96	in

Test:

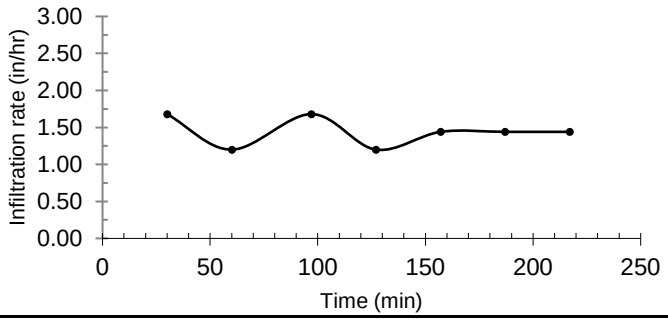
Test Start Time	11:09 AM	
Time interval selected:	30	minutes
Water level at start of test	4.49	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:39 AM	4.56	0.07	11:40 AM	4.45	1.68
2	12:10 PM	4.50	0.05	12:12 PM	4.41	1.20
3	12:42 PM	4.48	0.07	12:43 PM	4.41	1.68
4	1:13 PM	4.46	0.05	1:14 PM	4.37	1.20
5	1:44 PM	4.43	0.06	1:45 PM	4.35	1.44
6	2:15 PM	4.41	0.06	2:16 PM	4.31	1.44
7	2:46 PM	4.37	0.06			1.44

Total Length of Test (hr)	3:37
Field Rate During Final Reading (in./hr)	**1.44**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-14 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-15**
Date	5/8/2020
Sheet No.	1 of 1
Weather	40s°F, P.Rainy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	394.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	6.75
Test Bottom Elevation (ft)	387.8

Soil Conditions at Test Level:
Medium to stiff, brownish yellow (10YR, 6/8), silty lean clay with sand (CL), moist.

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	0.12	in
Water Drop During Final Presoak	0.12	in

Test:

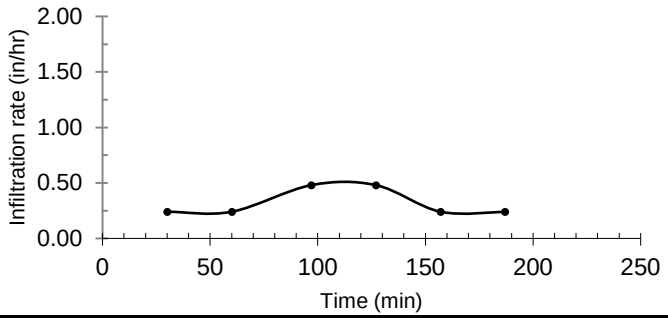
Test Start Time	10:05 AM	
Time interval selected:	30	minutes
Water level at start of test	9.08	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:35 AM	9.09	0.01	11:37 AM	9.09	0.24
2	12:07 PM	9.10	0.01	12:07 PM	9.10	0.24
3	12:37 PM	9.12	0.02	12:37 PM	9.12	0.48
4	1:07 PM	9.14	0.02	1:07 PM	9.14	0.48
5	1:37 PM	9.15	0.01	1:39 PM	9.15	0.24
6	2:09 PM	9.16	0.01			0.24

Total Length of Test (hr)	4:04
Field Rate During Final Reading (in./hr)	**0.24**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-15 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-16**
Date	5/8/2020
Sheet No.	1 of 1
Weather	40s°F, P.Rainy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	407.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	7.00
Test Bottom Elevation (ft)	400.5

Soil Conditions at Test Level:
Medium dense, dark yellowish brown (10YR, 4/6), silty sand (SM), trace friable rock fragments, moist to damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	4.68	in
Water Drop During Final Presoak	2.88	in

Test:

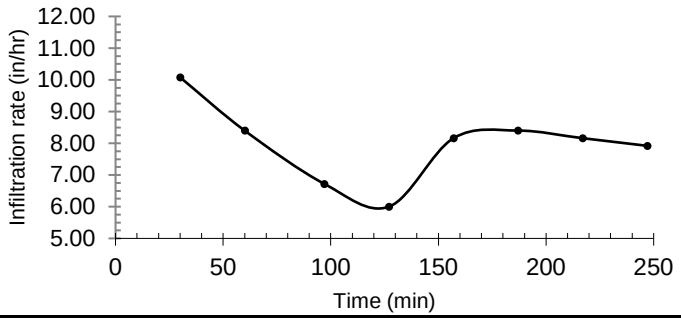
Test Start Time	9:53 AM	
Time interval selected:	30	minutes
Water level at start of test	9.15	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:24 AM	9.57	0.42	11:25 AM	9.06	10.08
2	11:55 AM	9.41	0.35	11:56 AM	8.89	8.40
3	12:26 PM	9.17	0.28	12:26 PM	8.98	6.72
4	12:56 PM	9.23	0.25	1:00 PM	8.98	6.00
5	1:30 PM	9.32	0.34	1:31 PM	9.04	8.16
6	2:01 PM	9.39	0.35	2:02 PM	9.05	8.40
7	2:32 PM	9.39	0.34	2:33 PM	9.05	8.16
8	3:03 PM	9.38	0.33			7.92

Total Length of Test (hr)	5:10
Field Rate During Final Reading (in./hr)	**7.92**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-16 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-17**
Date	5/8/2020
Sheet No.	1 of 1
Weather	40s°F, P.Rainy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	427.5	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Medium dense, yellowish red (5YR, 5/8), silty sand with friable rocks fragments (SM), micaceous, moist to damp (RESIDUAL).
Depth of Hole (ft)	10.00	
Test Bottom Elevation (ft)	417.5	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	7.20	in
Water Drop During Final Presoak	3.48	in

Test:

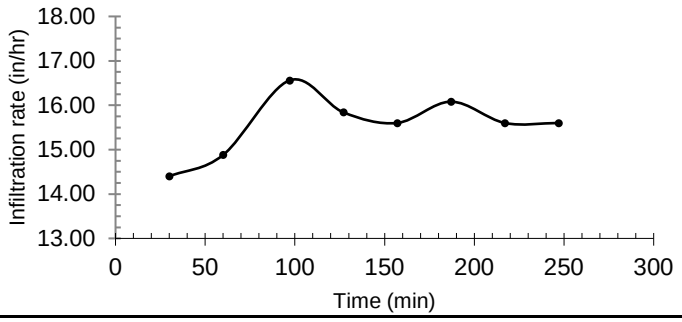
Test Start Time	9:42 AM	
Time interval selected:	30	minutes
Water level at start of test	9.28	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:14 AM	9.88	0.60	11:15 AM	9.23	14.40
2	11:45 AM	9.85	0.62	11:46 AM	9.19	14.88
3	12:16 PM	9.88	0.69	12:18 PM	9.22	16.56
4	12:48 PM	9.88	0.66	12:49 PM	9.32	15.84
5	1:19 PM	9.97	0.65	1:20 PM	9.20	15.60
6	1:50 PM	9.87	0.67	1:51 PM	9.21	16.08
7	2:21 PM	9.86	0.65	2:22 PM	9.20	15.60
8	2:52 PM	9.85	0.65			15.60

Total Length of Test (hr)	5:10
Field Rate During Final Reading (in./hr)	**15.60**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.
* Limiting zone at 12 ft (auger refusal on rock).



Notes

1. Refer to test boring SWB-17 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-18**
Date	5/8/2020
Sheet No.	1 of 1
Weather	40s°F, P.Rainy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	407.0	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Loose, yellowish brown (10YR, 5/8), silty sand (SM), micaceous, damp (RESIDUAL).
Depth of Hole (ft)	6.50	
Test Bottom Elevation (ft)	400.5	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	2.40	in
Water Drop During Final Presoak	1.80	in

Test:

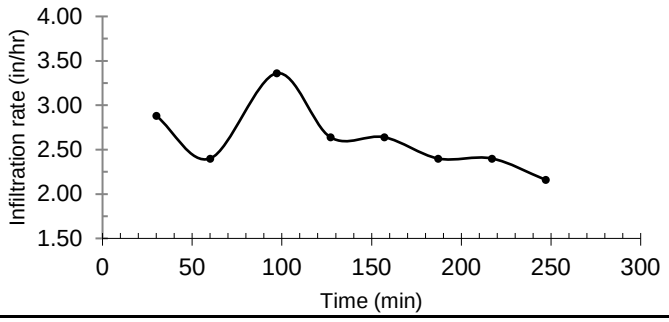
Test Start Time	9:58 AM	
Time interval selected:	30	minutes
Water level at start of test	9.21	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:30 AM	9.33	0.12	11:31 AM	9.15	2.88
2	12:01 PM	9.25	0.10	12:02 PM	9.00	2.40
3	12:32 PM	9.14	0.14	12:33 PM	9.04	3.36
4	1:03 PM	9.15	0.11	1:04 PM	9.06	2.64
5	1:34 PM	9.17	0.11	1:35 PM	9.08	2.64
6	2:05 PM	9.18	0.10	2:08 PM	9.10	2.40
7	2:38 PM	9.20	0.10	2:39 PM	9.10	2.40
8	3:09 PM	9.19	0.09			2.16

Total Length of Test (hr)	5:11
Field Rate During Final Reading (in./hr)	**2.16**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-18 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-19**
Date	5/12/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	406.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	10.50
Test Bottom Elevation (ft)	396.0

Soil Conditions at Test Level:
Medium dense, strong brown (7.5YR 5/8), silty sand with rock fragments (SM), micaceous, damp.

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	2.76	in
Water Drop During Final Presoak	2.76	in

Test:

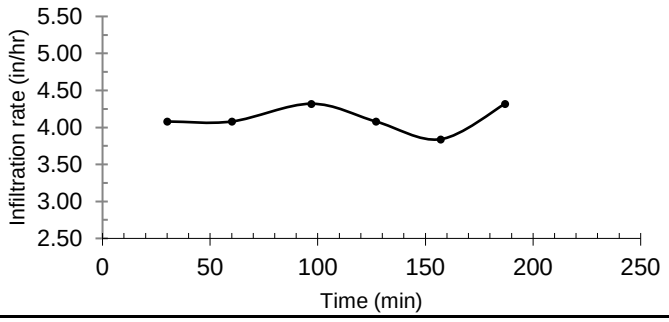
Test Start Time	9:47 AM	
Time interval selected:	30	minutes
Water level at start of test	10.03	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:17 AM	10.20	0.17	11:18 AM	10.03	4.08
2	11:48 AM	10.20	0.17	11:49 AM	10.01	4.08
3	12:19 PM	10.19	0.18	12:20 PM	10.03	4.32
4	12:50 PM	10.20	0.17	12:51 PM	10.03	4.08
5	1:21 PM	10.19	0.16	1:22 PM	10.02	3.84
6	1:52 PM	10.20	0.18			4.32

Total Length of Test (hr)	4:05
Field Rate During Final Reading (in./hr)	**4.32**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-19 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-20**
Date	5/12/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	394.0
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	6.50
Test Bottom Elevation (ft)	387.5

Soil Conditions at Test Level:
Medium dense, reddish yellow (7.5YR 6/8), silty sand (SM), micaceous, trace to little rocks fragments, moist to damp.

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	4.56	in
Water Drop During Final Presoak	3.48	in

Test:

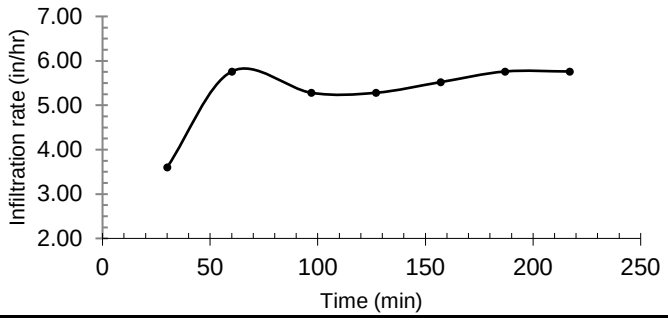
Test Start Time	9:56 AM	
Time interval selected:	30	minutes
Water level at start of test	8.39	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:29 AM	8.54	0.15	11:30 AM	8.38	3.60
2	12:00 PM	8.62	0.24	12:01 PM	8.37	5.76
3	12:31 PM	8.59	0.22	12:32 PM	8.38	5.28
4	1:02 PM	8.60	0.22	1:03 PM	8.40	5.28
5	1:33 PM	8.63	0.23	1:34 PM	8.39	5.52
6	2:04 PM	8.63	0.24	2:05 PM	8.40	5.76
7	2:35 PM	8.64	0.24			5.76

Total Length of Test (hr)	4:39
Field Rate During Final Reading (in./hr)	**5.76**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-20 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-21**
Date	5/9/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	377.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	7.50
Test Bottom Elevation (ft)	370.0

Soil Conditions at Test Level:
Loose to medium dense, reddish yellow (7.5YR, 6/8), silty sand (SM), micaceous, trace to little rocks fragments, moist to damp.

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	12.00	in
Water Drop During Final Presoak	15.80	in

Test:

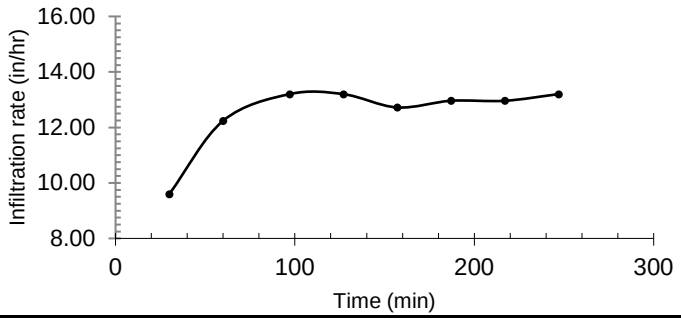
Test Start Time	2:35 PM	
Time interval selected:	10	minutes
Water level at start of test	9.19	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	3:47 PM	9.59	0.40	3:48 AM	9.00	9.60
2	3:58 PM	9.51	0.51	3:59 AM	8.94	12.24
3	4:09 PM	9.49	0.55	4:10 AM	8.91	13.20
4	4:20 PM	9.46	0.55	4:20 AM	8.88	13.20
5	4:30 PM	9.41	0.53	4:30 AM	8.91	12.72
6	4:40 PM	9.45	0.54	4:41 AM	8.90	12.96
7	4:51 PM	9.44	0.54	4:53 AM	8.95	12.96
8	5:03 PM	9.50	0.55			13.20

Total Length of Test (hr)	2:28
Field Rate During Final Reading (in./hr)	**13.20**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-21 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

TEST BORING LOG

Test Boring: SWB-1A
Sheet: 1 of 1
Elevation (ft): 357.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/06/20 - 05/06/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/06/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
355	2		S-1	0.0-2.0	WOH-1-1-2	2	1.0/50					F	Soft to stiff, dark yellowish brown (10YR 5/6), sandy lean clay (CL), moist (FILL).		
			S-2	2.0-4.0	4-4-5-5	11	1.0/50					F			
	4		S-3	4.0-6.0	4-4-3-4	9	0.5/25					F		5.0	
	6		S-4	6.0-8.0	5-5-5-5	13	2.0/100						Medium dense, light yellowish brown (2.5YR 6/3), silty sand (SM), micaceous, moist, trace rock fragments (RESIDUAL).		
350	8		S-5	8.0-10.0	4-5-6-6	14	1.8/90								
	10		S-6	10.0-12.0	8-8-10-9	23	2.0/100								
	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-1B
Sheet: 1 of 1
Elevation (ft): 365.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/06/20 - 05/06/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/06/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
365													6" Topsoil.	0.5	
	2		S-1	0.0-2.0	WOH-2-3-3	6	2.0/100						Soft to medium, dark yellowish brown (10YR 4/6), sandy lean clay (CL), micaceous, moist to very moist (FILL).		
			S-2	2.0-4.0	1-2-1-2	3	1.0/50								
	4		S-3	4.0-6.0	1-2-2-1	5	NR								
360	6		S-4	6.0-8.0	WOH-1-2-2	3	1.6/80						Very loose to loose, dark brown (7.5 YR 3/4), silty sand with gravel, micaceous, rock fragments, moist to very moist (RESIDUAL).	6.0	
	8		S-5	8.0-10.0	2-1-2-1	3	2.0/100								
	10		S-6	10.0-12.0	1-3-4-2	9	1.5/75								
355	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-2
Sheet: 1 of 1
Elevation (ft): 360.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													9" Topsoil.	0.8	
	2		S-1	0.0-2.0	WOH-WOH-1-1	1	1.4/70						Very soft to medium, strong brown (7.5YR 5/6), lean clay with sand (CL), moist (RESIDUAL).		
	4		S-2	2.0-4.0	2-2-2-4	5								4.0	
355	6		S-3	4.0-6.0	4-5-7-7	15							Medium dense, light olive brown (2.5Y 5/6), silty sand with gravel (SM), moist to damp (RESIDUAL).		
	8		S-4	6.0-8.0	5-8-12-5	26									
			S-5	8.0-10.0	7-7-7-8	18	NR							9.0	
350	10												Same as above except dark greenish gray (GLEY1 4/10Y).		
			S-6	10.0-12.0	5-6-6-7	15									
	12													12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-3
Sheet: 1 of 1
Elevation (ft): 365.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
365	0												8" Topsoil.	0.7	
	2		S-1	0.0-2.0	WOH-1-1-1	2							Very loose to loose, strong brown (7.5YR 5/6), silty sand (SM), moist to very moist.		
			S-2	2.0-4.0	3-2-2-3	5	1.6/80							4.0	
	4		S-3	4.0-6.0	5-5-7-8	15							Medium dense, light olive brown (2.5Y 5/6), silty sand (SM), moist to damp (RESIDUAL).		
360	6		S-4	6.0-8.0	5-6-8-11	18									
	8		S-5	8.0-10.0	7-8-9-13	22								10.0	
	10		S-6	10.0-12.0	20-25-18-18	57							Same as above except very dense with some rock fragments (WEATHERED ROCK).		
355	12													12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-4
Sheet: 1 of 1
Elevation (ft): 369.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth ▽ : 6.75' After drilling (05/07/20) | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
			S-1	0.0-2.0	WOH-1-1-2	2							Very soft to very stiff, yellowish brown (10YR 5/8), sandy silt (ML), moist (RESIDUAL).		
	2		S-2	2.0-4.0	3-3-3-3	7	2.0/100								S-2 trace rocks fragments.
365	4		S-3	4.0-6.0	1-4-5-9	11	2.0/100								
	6		S-4	6.0-8.0	8-9-9-9	23	0.5/25								▽ Gravel stuck in tip of S-4.
	8		S-5	8.0-10.0	3-3-3-4	7	2.0/100							9.0	
360	10		S-6	10.0-12.0	5-7-8-7	19	2.0/100						Medium dense, olive light brown (2.5Y 5/4), silty fine sand(SM), damp to moist (RESIDUAL).		Orangish brown, redox staining at 9.5'.
	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-5
Sheet: 1 of 1
Elevation (ft): 373.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth ▽ : 4.6' After drilling (05/07/20) | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
			S-1	0.0-2.0	1-1-1-1	2	NR						Very soft, sandy lean clay with gravel (CL), moist to very moist.	1.0	
	2												Soft to medium, olive yellow (2.5Y 6/6), sandy silt (ML), moist (RESIDUAL).		
370			S-2	2.0-4.0	1-1-2-1	3	2.0/100								
	4														▽
			S-3	4.0-6.0	2-2-2-3	5	NR								
	6													7.0	
			S-4	6.0-8.0	4-4-6-6	13	NR						Medium dense, olive yellow (2.5Y 6/8), silty fine sand (SM), damp (RESIDUAL).		
365	8														
			S-5	8.0-10.0	4-4-5-5	11	NR								
	10														
			S-6	10.0-12.0	6-7-7-7	18	NR								
	12													12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-6
Sheet: 1 of 1
Elevation (ft): 380.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
			S-1	0.0-2.0	WOH-1-1-2	2	1.9/95						Very soft to very stiff, strong brown (7.5YR 5/6), sandy lean clay (CL), damp.		
	2		S-2	2.0-4.0	5-6-7-7	17	2.0/100							3.8	
	4		S-3	4.0-6.0	6-6-7-8	17	1.9/95						Medium dense, light olive brown (2.5YR 5/4), silty sand with crushed gravel (SM), damp (RESIDUAL).		
375	6		S-4	6.0-8.0	7-7-6-6	17	1.9/95								
	8		S-5	8.0-10.0	6-7-7-7	18	2.0/100								
370	10		S-6	10.0-12.0	9-6-8-10	18	2.0/100								
	12		S-7	12.0-14.0	8-8-10-9	23	2.0/100								
	14														
365			S-8	14.0-16.0	6-8-9-13	22	2.0/100								
	16												Bottom of borehole at 16.0'.	16.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-7
Sheet: 1 of 1
Elevation (ft): 383.30

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/09/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													0.4" Asphalt pavement and subbase.	0.4	
	2		S-1	0.0-2.0	10-4-4-7	10	NR						Medium dense to dense, light olive brown (2.5YR 5/4), silty fine sand (SM), includes occasional rocks fragments, damp to moist (RESIDUAL).		
380	4		S-2	2.0-4.0	12-10-10-10	26	1.5/75								
	6		S-3	4.0-6.0	8-9-9-12	23	1.8/90								
	8		S-4	6.0-8.0	7-10-10-10	26	1.5/75								Bottom 8" of S-4 has some orange brown/gray redox staining.
375	10		S-5	8.0-10.0	6-8-9-15	22	2.0/100								
	12		S-6	10.0-12.0	12-12-15-15	35	2.0/100							12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-8
Sheet: 1 of 1
Elevation (ft): 373.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													4" Asphalt and subbase.	0.3	
			S-1	0.0-2.0	13-5-3-3	10	0.8/40						Stiff, yellowish brown (10YR 5/6), sandy lean clay (CL), damp to moist (RESIDUAL).		
	2														
370			S-2	2.0-4.0	6-6-4-6	13	2.0/100								
	4													4.0	
			S-3	4.0-6.0	9-9-10-11	25	1.9/95						Medioum dense to dense, light olive brown (2.5YR 5/4), silty fine sand (SM), damp (RESIDUAL).		
	6														
			S-4	6.0-8.0	12-13-14-13	35	1.3/65								
365	8														
			S-5	8.0-10.0	10-10-10-10	26	1.7/85								
	10													10.0	
													Bottom of borehole at 10.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-9
Sheet: 1 of 1
Elevation (ft): 376.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													6" Topsoil.	0.5	
375	2		S-1	0.0-2.0	1-1-2-2	3	1.0/50						Soft, strong brown (7.5YR 4/6), lean clay with sand (CL), moist (RESIDUAL).		
			S-2	2.0-4.0	4-5-7-8	15	1.5/75							3.0	
	4		S-3	4.0-6.0	5-5-5-5	13	1.6/80						Medium dense, light olive brown (2.5YR 5/4), silty fine sand (SM), damp (RESIDUAL).		
370	6		S-4	6.0-8.0	6-6-5-6	14	1.0/50								
	8		S-5	8.0-10.0	6-7-7-7	18	1.8/90								
	10		S-6	10.0-12.0	3-5-7-7	15	1.8/90								
365	12		S-7	12.0-14.0	7-7-10-10	22	1.5/75								
	14												Bottom of borehole at 14.0'.	14.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures, Inc. 1000 West 9th Avenue King of Prussia PA 19406 Ph: 610-265-1818 Fx: 610-265-1833 www.geostructures.net

GeoStructures

TEST BORING LOG

Test Boring: SWB-10
Sheet: 1 of 1
Elevation (ft): 374.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													4" Topsoil.	0.3	
	2		S-1	0.0-2.0	11-3-3-3	7	0.8/40						Medium to stiff, dark yellowish brown (10YR 3/6), sandy silt (ML), moist (FILL).		
			S-2	2.0-4.0	5-3-5-5	10	1.7/85							3.0	
	4												Same as above except residual.	4.0	
370			S-3	4.0-6.0	4-3-2-4	6	1.3/65						Loose to medium dense, yellowish brown (10YR 5/6), silty fine sand (SM), micaceous, moist (RESIDUAL).		
	6		S-4	6.0-8.0	4-12-7-7	25	1.4/70								
	8		S-5	8.0-10.0	3-3-4-5	9	2.0/100								
365	10		S-6	10.0-12.0	5-5-5-5	13	2.0/100								
	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures, Inc. 1000 West 9th Avenue King of Prussia PA 19406 Ph: 610-265-1818 Fx: 610-265-1833 www.geostructures.net

GeoStructures

TEST BORING LOG

Test Boring: SWB-11A
Sheet: 1 of 1
Elevation (ft): 370.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/06/20 - 05/06/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/06/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													4" Asphalt.	0.3	
	2		S-1	0.0-2.0	13-2-2-2	5	NR						Loose, very dark grayish brown (2.5Y 3/2), sandy lean clay (CL), very moist to moist (FILL).		
			S-2	2.0-4.0	2-2-2-2	5	1.0/50								
	4														
365			S-3	4.0-6.0	3-3-3-3	7	NR								S-3: Rock in tip.
	6													6.0	
			S-4	6.0-8.0	3-4-5-5	11	1.8/90						Medium dense, light yellowish brown (10YR 6/4), silty sand (SM), micaceous, trace rocks fragments, moist (RESIDUAL).		
	8														
			S-5	8.0-10.0	8-9-9-8	23	1.2/60								
360	10													10.0	
													Bottom of borehole at 10.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:54:

GeoStructures

TEST BORING LOG

Test Boring: SWB-11B
Sheet: 1 of 1
Elevation (ft): 365.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/06/20 - 05/06/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/06/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													4" Topsoil.	0.3	
	2		S-1	0.0-2.0	WOH-2-WOH-1	2	1.1/55						Very loose, light olive brown (2.5YR 5/4), silty fine sand with rocks fragments (SM), micaceous (FILL).	2.0	
			S-2	2.0-4.0	WOH-1-1-2	2	1.3/65						Soft, dark yellowish brown (10YR 5/8), sandy lean clay (CL), micaceous.		
	4														
360			S-3	4.0-6.0	1-1-2-2	3	NR								S-3: Rock stuck in tip.
	6													6.0	
			S-4	6.0-8.0	2-2-4-4	7	1.8/90						Same as above except residual with traces of rock fragments, moist to very moist.		
	8														
			S-5	8.0-10.0	1-2-3-4	6	1.9/95								
355	10														
			S-6	10.0-12.0	6-7-5-5	15	1.8/90								
	12													12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-12
Sheet: 1 of 1
Elevation (ft): 383.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													6" Topsoil.	0.5	
			S-1	0.0-2.0	1-1-1-2	2	1.5/75						Soft, yellowish brown (10YR 5/8), sandy silt (ML), have little angular gravel (RESIDUAL).	2.0	
	2		S-2	2.0-4.0	2-2-3-2	6	1.8/90						Loose, light olive brown (2.5YR 5/4), silty fine sand (SM), damp (RESIDUAL).	3.5	
380	4		S-3	4.0-6.0	3-6-6-4	15	1.0/50						Loose to medium dense, dark yellowish brown (10YR 4/6), silty sand (SM), damp (RESIDUAL).		
	6		S-4	6.0-8.0	4-4-3-4	9	1.5/75								
	8														
375			S-5	8.0-10.0	5-4-4-3	10	1.8/90								
	10												Bottom of borehole at 10.0'.	10.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-13
Sheet: 1 of 1
Elevation (ft): 385.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
385													8" Topsoil.	0.7	
	2		S-1	0.0-2.0	1-1-2-2	3	1.6/80						Soft to medium, strong brown (7.5YR 5/8), sandy silt (ML) with gravel, moist to damp (RESIDUAL).		
			S-2	2.0-4.0	3-3-4-4	9	1.5/75							3.5	
	4		S-3	4.0-6.0	3-3-3-4	7	1.8/90						Loose to medium dense, light olive brown (2.5Y 5/4), silty fine sand (SM), damp to moist (RESIDUAL).		
380	6		S-4	6.0-8.0	5-5-5-6	13	2.0/100								
	8		S-5	8.0-10.0	5-5-5-5	13	1.0/50								
	10													10.0	
													Bottom of borehole at 10.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-14
Sheet: 1 of 1
Elevation (ft): 392.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													6" Topsoil.	0.5	
			S-1	0.0-2.0	1-1-2-2	3	1.5/75						Soft to stiff, reddish brown (5YR 5/4), sandy silt (ML), moist to damp (RESIDUAL).		
390	2														
			S-2	2.0-4.0	3-4-4-4	10	1.5/75								
	4													4.5	
			S-3	4.0-6.0	4-5-5-7	13	2.0/100						Medium dense, brownish yellow (10YR 6/8), silty fine sand (SM), damp (RESIDUAL).		
	6														
385			S-4	6.0-8.0	5-4-5-5	11	1.8/90								
	8														
			S-5	8.0-10.0	5-5-4-6	11	1.4/70								
	10													10.0	
													Bottom of borehole at 10.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-15
Sheet: 1 of 1
Elevation (ft): 394.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													4" Topsoil.	0.3	
	2		S-1	0.0-2.0	1-1-1-2	2	1.5/75						Soft, strong brown (7.5YR 5/8), sandy silt (ML), moist (FILL).		
			S-2	2.0-4.0	2-2-1-2	3	1.6/80								
	4													4.0	
390			S-3	4.0-6.0	2-2-2-3	5	1.0/50				2.0		Medium to stiff, brownish yellow (10YR 6/8), lean clay with sand (CL), moist.		
	6		S-4	6.0-8.0	4-4-5-5	11	2.0/100				2.25				
	8		S-5	8.0-10.0	4-4-5-5	11	1.5/75				2.0				
385	10		S-6	10.0-12.0	5-5-4-4	11	1.0/50				2.5				
	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-16
Sheet: 1 of 1
Elevation (ft): 407.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
405	2		S-1	0.0-2.0	1-2-2-1	5	1.5/75						Loose to very loose, yellowish red (5YR 5/8), silty sand with angular gravel (SM), micaceous, moist to damp (RESIDUAL).		
	4		S-2	2.0-4.0	3-2-1-2	3	1.2/60							4.0	
	6		S-3	4.0-6.0	4-5-5-4	13	1.4/70						Medium dense, dark yellowish brown (10YR 4/6), silty sand (SM), trace friable rocks fragments, moist to damp (RESIDUAL).		
400	8		S-4	6.0-8.0	4-5-4-6	11	1.8/90								
	10		S-5	8.0-10.0	3-5-6-5	14	2.0/100								
	12		S-6	10.0-12.0	5-6-6-6	15	1.8/90							12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-17
Sheet: 1 of 1
Elevation (ft): 427.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													2" Topsoil.	0.2	
425	2		S-1	0.0-2.0	1-2-2-5	5	1.6/80						Loose to dense, yellowish red (5YR 5/8), silty sand with friable rocks fragments (SM), micaceous, moist to damp (RESIDUAL).		
	4		S-2	2.0-4.0	1-5-5-1	13	1.2/60								
	6		S-3	4.0-6.0	8-8-5-5	17	1.2/60								
420	8		S-4	6.0-8.0	4-5-5-6	13	1.5/75								
	10		S-5	8.0-10.0	10-15-20-38	46	1.8/90								
	12		S-6	10.0-12.0	5-7-9-18	21	1.3/65								
415	14		S-7	12.0-14.0	30-40-39-32	105							Same as above except very dense with some rock fragments (WEATHERED ROCK).	12.0	Limiting zone at 12', test adjusted to 10'.
			S-8	14.0-14.4	50/5"									14.4	
													Bottom of borehole at 14.4'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-18
Sheet: 1 of 1
Elevation (ft): 407.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													6" Topsoil.	0.5	
405	2		S-1	0.0-2.0	1-1-3-2	5	2.0/100						Medium, brownish yellow (10YR 6/6), sandy lean clay (CL), moist to damp (RESIDUAL).		
			S-2	2.0-4.0	2-2-4-4	7	1.0/50								
	4		S-3	4.0-6.0	2-3-4-4	9	0.5/25								
	6													6.0	
400			S-4	6.0-8.0	3-4-5-5	11	1.9/95						Medium dense to loose, yellowish brown (10YR 5/8), silty sand (SM), micaceous, damp (RESIDUAL).		
	8		S-5	8.0-10.0	4-3-4-3	9	1.2/60								
	10		S-6	10.0-12.0	5-6-6-7	15	1.5/75								
395	12													12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-19
Sheet: 1 of 1
Elevation (ft): 406.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
405	2		S-1	0.0-2.0	1-1-1-2	2	1.2/60						4" Topsoil. Very loose to medium dense, strong brown (7.5YR 5/8), silty sand with rock fragments (SM), micaceous, damp.	0.3	
	4		S-2	2.0-4.0	2-2-2-3	5	1.8/90								
	6		S-3	4.0-6.0	4-5-8-8	17	1.8/90								
400	8		S-4	6.0-8.0	5-6-7-6	17	1.5/75								
	10		S-5	8.0-10.0	7-7-6-6	17	1.8/90								
395	12		S-6	10.0-12.0	9-9-6-10	19								12.0	
	14		S-7	12.0-14.0	8-11-12-12	30							Same as above except dense with some rock fragments (COMPLETELY WEATHERED ROCK).		
	16		S-8	14.0-16.0	11-13-13-12	34								16.0	
													Bottom of borehole at 16.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-20
Sheet: 1 of 1
Elevation (ft): 394.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													6" Topsoil.	0.5	
			S-1	0.0-2.0	2-4-4-3	10	1.8/90						Loose, strong brown (7.5YR 5/8), silty sand with rock fragments, moist (FILL).	2.0	
	2		S-2	2.0-4.0	4-4-3-2	9	1.5/75						Loose to medium dense, reddish yellow (7.5YR 6/8), silty sand (SM), micaceous, trace to little rocks fragments, moist to damp.		
390	4		S-3	4.0-6.0	4-4-4-4	10	1.5/75								
	6		S-4	6.0-8.0	5-5-8-8	17	1.6/80								
	8		S-5	8.0-10.0	6-8-8-9	21	1.8/90								
385	10		S-6	10.0-12.0	7-10-7-11	22	1.8/90								
	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-21
Sheet: 1 of 1
Elevation (ft): 377.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/06/20 - 05/06/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/06/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
			S-1	0.0-2.0	1-WOH-1-WOH	1	0.9/45						Very soft, dark yellowish brown (10YR 4/4), sandy silt with angular gravel (ML), very moist (FILL).		
375	2		S-2	2.0-4.0	3-3-5-7	10	1.5/75							3.0	
	4		S-3	4.0-6.0	8-8-10-11	23	2.0/100						Medium dense to dense, brownish yellow (10YR 6/6), silty sand with angular gravel (SM), micaceous, damp (RESIDUAL).		
370	6		S-4	6.0-8.0	12-13-20-18	43	2.0/100								
	8		S-5	8.0-10.0	12-12-12-12	31	2.0/100							10.0	
	10		S-6	10.0-12.0	25-30-30-40	79	1.5/75						Very dense, light olive brown (2.5YR 5/4), silty sand and rock fragments (SM/GM), micaceous, dry (COMPLETELY WEATHERED ROCK).	12.0	
	12												Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.